

MCRP 4-11C

Combat Cargo Operations Handbook



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FOREWORD

Marine Corps Reference Publication (MCRP) 4-11C, *Combat Cargo Operations Handbook*, addresses the tactics, techniques, and procedures for combat cargo personnel, amphibious embarkation planning and execution, ship-to-shore (STS) movement, landing force operational reserve material (LFORM), ammunition, well deck and flight deck operations, and administration of landing force spaces aboard amphibious ships.

Combat cargo officers and combat cargo assistants are assigned with the Navy at Naval Surface Force Atlantic and Pacific staffs; amphibious groups and amphibious squadron staffs; and aboard LFORM-carrying amphibious ships. These Marines are the bridge between the landing force and the Navy in performing their duties.

This publication is intended for staff sergeants through lieutenant colonels having military occupational specialty 04XX assigned combat cargo duties with the Navy. It also provides a broad overview for commanders and their staffs to familiarize them with the responsibilities of combat cargo personnel.

Initial integration of sailors and Marines aboard ship is most challenging; however, the smooth transition lies with the combat cargo officer and combat cargo assistant.

The Marine Expeditionary Unit (MEU)/amphibious ready group (ARG) is used to establish a point of reference throughout MCRP 4-11C to provide consistency in describing combat cargo duties, responsibilities, and associated reports.

Reviewed and approved this date.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

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COMBAT CARGO OPERATIONS HANDBOOK

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CHAPTER 1

COMBAT CARGO OFFICER RESPONSIBILITIES

The MEU/ARG is used throughout this publication to establish a point of reference for describing combat cargo duties, responsibilities and associated documentation.

The combat cargo officer's (CCO's) primary duties are coordinating, planning, and obtaining information from the embarking forces before actual embarkation and debarkation. The combat cargo assistant (CCA) assists the CCO in performing these primary duties.

The CCO is a special staff officer to the naval unit commander, under the cognizance of the executive officer (XO)/chief staff officer, and on a coequal basis with the command's other department heads. The CCO may be assigned additional duties. However, the CCO should not be assigned watches or additional/collateral duties that interfere with performance of his duty, especially during operations. Combat cargo personnel are under the administrative control of Expeditionary Warfare Training Group Atlantic/Pacific (EWTGLANT/PAC) or Marine Corps Air Station (MCAS), Iwakuni/Marine Corps Bases, Japan.

The ship's CCO is a Marine officer assigned as a member of the ship's crew complement. Ships with CCO billets include the general purpose amphibious assault ship (LHA), multipurpose amphibious assault ship (LHD), amphibious transport dock (LPD), and landing ship dock ([LSD]-49 cargo variant). On other amphibious ships (such as the [LSD, 36/41] where no Marine CCO is provided), a naval officer, usually the ship's first lieutenant, performs this function.

The CCO is responsible for coordination with embarked units and appropriate department heads/staff officers in preparing and executing plans for embarkation or debarkation of landing force (LF) personnel, supplies, and equipment. This includes

assisting in developing billeting and messing plans. The ship's division officers are responsible for LF space maintenance and upkeep.

The CCO must have access to all ship's cargo, vehicle, ammunition stowage areas, and associated cargo documents to perform the following duties:

- Managing the landing force operational reserve material (LFORM)/mission load allowance (MLA) program.
- Ensuring proper stowage, security inspection, accountability, and serviceability.
- Providing the ship's commanding officer (CO) a means of check and balance.

See appendices A and B for amphibious force capabilities.

Levels of Command

Naval Surface Force, Atlantic and Naval Surface Force, Pacific

The CCO/Amphibious Plans Officer—

- Is the assistant force Marine officer and acts as the force Marine officer in his absence.
- Acts as the staff advisor for all matters pertaining to loading and offloading LF personnel, supplies and equipment.
- Monitors the LFORM program.
- Monitors amphibious ship building, overhaul, and conversion programs through close liaison and coordination with the appropriate assistant chief of staff.
- Is the principal advisor for characteristics of amphibious ships, landing craft, amphibious vehicles, and their loading and offloading characteristics.
- Exercises staff supervision over all assigned CCOs and their enlisted assistants.

- Maintains liaison with higher, adjacent, and subordinate commands on force plan development and maintenance for expeditionary operations.
- Maintains liaison with amphibious type desk managers regarding LF spaces.
- Conducts review of operation plans and orders associated with LF and amphibious matters.
- Monitors and makes recommendations for preparation for overseas movement initiatives pertaining to amphibious ships and landing craft.
- Conducts review of the force task organization, missions, tasks, functions and command relationships of amphibious commands.
- At amphibious planning conferences, represents Commander, Naval Surface Force Atlantic (COMNAVSURFLANT)/Commander, Naval Surface Force, Pacific (COMNAVSURFPAC).
- Serves as the COMNAVSURFLANT and the COMNAVSURFPAC representative for amphibious matters during inspections and crew certifications.
- Coordinates opportune lift (OPLIFT) requirements as required.

Amphibious Group One, Two, and Three

The CCO—

- Advises and assists the transport group commander in matters concerning the loading and offloading of all LF personnel, supplies, and equipment.
- Acts as liaison officer between the transport group commander and the embarkation group commander.
- Maintains a complete file of all amphibious ship characteristics and oversees the development of individual ship embarked troop regulations, LFORM supplements, and ship's loading characteristics pamphlets (SLCPs).
- Coordinates activities of transport unit combat cargo officers to include collecting the load plans of the transport group and maintaining up-to-date records of loading/offloading progress;

compiling periodic reports as required by higher authority.

- Advises, coordinates, and directs the activities of ship and amphibious squadron combat cargo personnel relative to training, automated systems policy/standardization, and Marine administrative support.
- Coordinates port handling and inland transportation, when required, as requested by embarking units and amphibious ships. This may also involve the coordination of marshalling areas on naval stations/bases.

Amphibious Squadron

The CCO—

- Advises and assists the commander on all matters pertaining to the loading and offloading of LF personnel, supplies, and equipment.
- Acts as liaison officer between the commander and the corresponding embarking troop commander.
- Maintains an SLCP file for those ships within the squadron.
- Advises/coordinates the activities of assigned ship combat cargo personnel as they pertain to operational and embark/debark requirements.
- Reviews all onload/offload plans.
- Maintains a copy of all load plans of ships in the transport unit.
- Compiles and transmits periodic reports to higher authority during loading and offloading.

Shipboard

The ship's first lieutenant, assistants, and deck division officers are responsible to the ship's CO for handling cargo, operating cargo-handling equipment, and the cargo's safety and security in the cargo holds or vehicle stowage areas. The ship's weapons officer or ordnance officer, if so manned, is responsible to the CO for cargo safety and security in ammunition stowage magazines and lockers. See appendix C for landing force spaces guidance.

The CCO—

- Advises the CO on plans for loading and offloading troop cargo and embarkation, communication requirements, billeting, and messing troops.
- Prepares, corrects, maintains and distributes the SLCP, embarked troop regulations, and LFORM supplements.
- Establishes and maintains liaison with the embarkation team commander.
- Advises and assists the team embarkation officer in preparing the detailed loading and offloading plan.
- Provides the embarkation team commander with a current inventory of United States Marine Corps (USMC) LFORM/MLA with applicable lot numbers for class I and class V stocks. This also includes dates for inspections, class I onload and planned rotation dates.
- Supervises the loading and offloading of all LF personnel, supplies, and equipment.

During the planning phase of an operation, the CCO—

- Prepares, corrects, maintains, and distributes the LFORM supplement using approved logistics automated information systems ensuring that LFORM/MLA are properly documented. These same systems will also be used to document—
 - The aviation consolidated allowance list.
 - The individual material readiness list.
 - Aviation ground support equipment.
 - Container handling equipment (CHE)/material handling equipment (MHE).
 - Other ship's cargo/equipment planned for stowage in LF designated spaces, to include the flight deck and hangar deck.
- Establishes and maintains liaison with the team embarkation officer (TEO).
- Advises and assists the TEO in preparing loading and offloading plans.

- Advises and assists in developing billeting plans and LF space apportionment while considering Navy support element (NSE) and ship's augmentation requirements.

During the embarkation and rehearsal phase of an operation, the CCO—

- Maintains continuous liaison with the embarkation team commander through the TEO.
- Ensures that the loading/offloading plan is being followed and that required deviations are properly documented and approved by both the ship's CO and embarkation team commander.
- Monitors the LF space turnover process to ensure that the ship's division officers and LF representatives properly document all discrepancies.
- Keeps the ship's CO informed of the progress of loading and offloading.
- Advises the ship's CO and embarkation team commander of problem areas encountered during the rehearsal phase and recommend corrective action.
- Coordinates with the ship's first lieutenant and weapons officer to ensure that Marine Corps LFORM and MLA are not inadvertently offloaded with other LF material during training exercises or operations.

During an operation, the CCO—

- Makes frequent inspections to ensure that offloading is proceeding according to plan.
- Ensures that all items of cargo requested on a priority basis are expeditiously located and offloaded.
- In cooperation with the TEO, maintains data from which periodic loading/unloading progress reports are made and transmitted, as appropriate.
- Keeps a record of boat and helicopter requirements, by number and type, necessary to complete unloading.

See appendix D for general administration.

Ship's Command Organization

Combat cargo personnel should fully integrate themselves into the ship's crew and completely understand the ship's organization. The following paragraphs highlight typical command organization and general duties of these personnel. The ship's standard organization and regulations manual provides detailed information on shipboard internal organization.

Commanding Officer

The CO is the highest authority aboard the ship. All personnel aboard ship, including embarked personnel, are subject to the CO's orders. All orders from the CO to embarked personnel will be transmitted through the commanding officer of troops (COT).

Executive Officer

The XO is the ship's second in command and direct representative of the CO when executing the ship's routine. The XO is especially concerned with the organization, health and sanitation, discipline, exercise, and efficient condition of the crew. The XO normally performs the duties of debarkation control officer during shipboard embarkation and debarkation.

Operations Officer

The operations officer (OpsO) is responsible for collecting, evaluating, and disseminating combat and operational information for assigned unit missions and tasks and, except as may be the responsibility of another officer, all other unit operations and designated airborne aircraft matters. The OpsO is normally responsible to the XO for coordinating and developing the daily, weekly, and long-range schedules for the ship and embarked units.

First Lieutenant

The first lieutenant is the head of the deck department and supervises the employment of equipment

associated with deck seamanship. Depending on the class of amphibious warfare ship, the first lieutenant may be required to act as the combat systems officer, weapons officer or CCO. Regardless, the first lieutenant is responsible for ensuring that all ship's authorized vehicles, material handling equipment, cargo spaces, and lashing equipment is in proper working order. Additionally, the first lieutenant is responsible for the preservation and cleanliness of the exterior of the ship, the operation and care of the ship's boats, and all other matters pertaining to deck seamanship.

On LHA/LHD class ships, the aircraft intermediate maintenance department is responsible for all organic aviation ground support equipment, MHE, and the ship's authorized vehicles. Some LHA/LHD class ships have placed the ordnance officer (air gunner) under the air department, in which case air department is responsible for the cargo holds and lashing equipment in those spaces assigned that are used to stow ordnance. On other ships, the ordnance officer falls under combat systems, in which case combat systems assumes responsibility for the cargo holds and lashing equipment. Engineering ("A gang") and electrical division personnel are responsible for the maintenance of the ship's conveyor and elevator systems.

Chief Engineer

The chief engineer (CHENG) is the head of the engineering department and is responsible for the operation and maintenance of all propulsion and auxiliary machinery, and damage control readiness. Upon request from other ships' department heads, the CHENG accomplishes repairs beyond their capabilities.

The responsibilities of the damage control assistant, under the CHENG, include—

- Establishing and maintaining an effective damage control organization.
- Supervising repairs to the hull and machinery except as specifically assigned to another department or division.

- Training the ship's repair party personnel in damage control, including fire fighting, emergency repairs and non-medical defense against nuclear, biological, and chemical warfare.
- Ensuring the maintenance, operation, and repair of the ship's collection, holding, and transfer system.
- Reviewing the ship's detailed load plans and providing the ship's CO with a written assessment on the overall impact of the load on trim, stress, and stability during embarkation planning.

The electrical safety officer is responsible to the XO for the conduct of an effective shipwide electrical safety program. Duties include—

- Electrical safety indoctrination of all ship's personnel (to include embarked personnel).
- Spot checks of electrical equipment to ensure compliance with the safety program.
- Safety checks as required on all personal electrical tools, equipment, and devices (radios, computers, etc.) for use aboard ship.

Combat Systems Officer and Ordnance Officer

The combat systems officer is responsible for supervising and directing the employment of the unit's/ship's combat systems, including ordnance equipment. Duties include—

- Operation, care, maintenance, and inspection of the armament, armament appurtenances, and magazine spaces.
- Procurement, care, handling, accounting, testing, stowage, and use of explosives, propellants, pyrotechnics, and nuclear weapons.

The ordnance officer assists the combat systems officer in these duties. The ordnance officer is responsible, under the CO, for —

- Supervising the employment of ordnance equipment and equipment associated with deck seamanship, except for that ordnance or deck

equipment specifically assigned to another department.

- Ammunition management, accountability, and reporting and for the stowing munitions in accordance with the combat cargo developed load plan.

Note: On those classes of ships that do not have a combat systems department, the ship's first lieutenant will be assigned these duties with a weapons officer executing the day-to-day tasks.

Supply Officer

The supply officer (SupO) is responsible, under the CO, for procuring, receiving, storing, issuing, shipping, transferring, selling, accounting for, and, while in their custody, maintaining all stores and equipment for the command. The SupO's duties include the operation of the general mess, wardroom mess, ship's store, ship's laundry, disbursing, ship's barbershops, vending machines, as well as supervising all disbursing and postal operations.

Air Officer (Air Boss)

The air officer (air boss) is responsible, under the CO, for supervising aircraft launching/landing operations, servicing and handling of all aircraft and unmanned aerial vehicles. Assistants to the air officer who directly impact on combat cargo operations are the flight deck officer, the hangar deck officer, the aviation fuels officer, the aircraft handling officer, and, for some ships, the ordnance officer (air gunner).

Medical and Dental Officers

Most amphibious ships will also have assigned medical and dental officers who are responsible to the CO for the administration of their respective health programs. Normally, the medical officer also assists in the ship's hearing conservation and heat stress programs.

Landing Force Integration

The most significant shipboard challenge is LF integration. The CCO should indoctrinate LF and ship's company personnel on each other's requirements and routines. This indoctrination will aid in the seamless transition from two separate and distinct entities into a cohesive military team.

Integration Tools

The ship's CO and the COT may use the following integration tools:

- The ship's closed circuit television system for joint ship's CO and COT information briefs.
- Integrate LF personnel into the ship's divisional work force; e.g., have a Marine who is a skilled welder work with the ship's hull technicians.
- Form joint Navy/Marine Corps habitability teams to complete habitability improvement projects in LF spaces.
- Conduct "steel beach picnics" (cookouts on the ship's flight deck) with the LF and ship's company officers operating the grills and serving the enlisted personnel.
- Conduct joint meetings, such as Planning Board for Training and Eight O'clock Reports. Landing force and ship requirements can be addressed and scheduled during these meetings.

CHAPTER 2

LANDING FORCE OPERATIONAL RESERVE MATERIAL AND AMMUNITION

The CCO's role as LFORM manager mandates a working knowledge of ammunition categories, allowances, ordering information and timelines, stowage compatibility and load planning, inventory requirements, loading preparations and policies, and required reports. Given the importance of these sustainment stocks, aggressive and active involvement is critical to providing timely support to the LF and mission success.

The ship's ordnance/weapons officer is responsible for accounting, managing, and signing for LFORM ammunition stocks. As the LFORM account manager, the CCO is responsible for—

- Validating LFORM breakout requirements in accordance with current COMNAVINST 4080 series.
- Preparing and distributing the LFORM supplement using fielded logistics automated information systems.
- Validating the proper loading and stowage of all class V products in accordance with the load plan.
- Reviewing the LFORM transaction item reports and ammunition shortfall messages before their release.
- Conducting periodic reviews/reconciliations of the LFORM supplement.
- Monitoring/reviewing all notices of ammunition reclassification, ammunition information notice, and overhead fire messages for potential impact on LFORM class V stocks.

Class I (Subsistence), Class III (Bulk and Packaged Petroleum, Oils, and Lubricants [POL]), Class IV (Field Fortification Materials), and Class V (Ammunition) are pre-positioned on

assigned ships to sustain a MEU. The notional planning figure used to derive the actual quantities to be embarked is based on 15 days of sustainment within an ARG for about 2,400 personnel. See appendix E for classes of supply.

Although LFORM is not planned for storage aboard LSD-41 and LSD-49 (cargo variant) class ships, these vessels may be required to carry specific quantities as determined by Commander, Marine Corps Forces, Atlantic (COMMARFORLANT)/Marine Corps Forces, Pacific (COMMARFORPAC).

Early coordination between combat cargo and Marine Corps Forces, Atlantic (MARFORLANT)/Marine Corps Forces, Pacific (MARFORPAC) representatives will ensure a successful onload by providing information on payment for crane, MHE/CHE, and stevedore support and the actual weight/configuration of the LFORM class I, III, and IV pallets.

The CCO does not sign for LFORM. Normally, the ship's SupO provides receipts for all class I, III (Packaged), and class IV LFORM stocks. Class III Bulk (motor gasoline [MOGAS]) is normally accepted and signed for by the ship's air department fuels officer or CHENG depending on the class of ship. The CCO, as LFORM manager, is responsible for—

- Coordinating the onload/offload of these stocks with the ship's CO and other department heads as required.
- Generating all LFORM onload/offload requests to MARFORLANT/MARFORPAC.
- Conducting joint inventories with the designated MARFORLANT/MARFORPAC representatives at the time of receipt/turn-in.

- Documenting/load planning LFORM stocks using the current logistics automated information systems.
- Coordinating the institution of pest control procedures/inspections for class I meals, ready to eat with the ship's medical officer.

Detailed guidance on class I, III, and IV LFORM administration, requisitioning, loading, and reporting is found in current COMNAVINST 4080 series.

Class I, Subsistence

Class I consists of packaged operational rations containing meals, ready to eat and fuel bars, compressed trioxane. Although the fuel bar, compressed trioxane is a class III item, it is associated and embarked with the meals, ready to eat. Class I is pre-positioned aboard assigned ships to provide the contingency ration support for deployed forces. This requirement is calculated on providing each member of MEU three meals a day for 15 days. LFORM rations will not normally be used to satisfy routine training requirements unless authorized by COMMARFORLANT/COMMARFORPAC.

Class III, Bulk and Packaged Petroleum, Oils, and Lubricants

Class III items consist of bulk MOGAS and packaged POL products. The total POL requirements are based upon providing 15 days of supply to support a MEU. The specific quantities to be loaded by class of ship are delineated in the current COMNAVINST 4080 series. LFORM POL is designated as such due to funding sources and the ships inability to rotate or have separate tanks for Navy and Marine Corps fuel. Some

pertinent data points when dealing with class III LFORM stocks follow.

The Navy has the responsibility to provide pre-position wartime reserves bulk fuel except MOGAS; Marine Corps Order (MCO) P4400.39, *War Reserve Materiel Policy Manual*, applies.

LFORM POL is requisitioned by COMMARFORLANT/COMMARFORPAC and pre-positioned aboard amphibious vessels for contingency purposes. The total requirement is based upon providing 15 days of supply to support a MEU to include the NSE.

For this category of POL, the bulk portion consists of MOGAS only. Due to its relatively short shelf-life and to prevent contamination to the fuel, MOGAS is not normally loaded earlier than 30 days before each deployment or the advanced training phase.

LF elements are normally required to support MOGAS requirements for short duration work-up periods before the onload of LFORM MOGAS. The LF should coordinate the loading and stowage of MOGAS bladders or drums with the ship's CCO. Landing force/embarked units are responsible for embarking sufficient quantities of flex-cells or fuel bladders to transport the fuel from ship-to-shore.

The use of bulk MOGAS is authorized in support of training or exercise evolutions and contingency operations. When bulk MOGAS is consumed for training or exercises, the unit requesting the fuel must provide the ship with appropriate documentation, Department of Defense (DD) Form 1149, *Requisition and Invoice/Shipping Document*, for reimbursement of cost. The ship is required to report loading/off-loading/consumption of the fuel in accordance with the current edition of COMNAVINST 4080 series.

The use of any packaged POL product is restricted to contingency operations. Exercise or training requirements must be provided from embarked LF supplies.

Class IV, Field Fortification Materials

Class IV (Construction/Field Fortification) consists of construction/field fortification material that is limited to barbed wire, concertina wire, fence posts, and sandbags. These assets have been derived from the equipment allowance file and tailored to the projected MEU requirements for 15 days.

Class V, Ammunition Accounts

Ships Part Control Center Instruction (SPCCINST) 8010.12, *Conventional Ammunition Integrated Management System (CAIMS)*, describes the ammunition accounts maintained onboard amphibious ships. Detailed descriptions follow.

LFORM Class V(W)

LFORM Class V(W), designated the “November” account, is Marine Corps-owned ground ammunition designated to support the LF during an actual contingency or unscheduled training for a possible contingency. LFORM allowances are controlled by the COMMARFORLANT and COMMARFORPAC, and requisitioned by the Marine Expeditionary Force (MEF). The current allowance is for 10 days of supply on board the LHAs and LHDs, and 5 days of supply on board the LPDs. LSTs and LSDs are not routine LFORM carriers, but may carry a small amount in support of independent deployments such as a special purpose Marine air-ground task force (SPMAGTF) or the annual US-South American allied exercise (UNITAS). Tailoring of the LFORM account may be coordinated with COMMARFORLANT/

COMMARFORPAC, via the amphibious group (PHIBGRU) as required. With the exception of requisitioning LFORM, the ship is responsible for all aspects of LFORM and its accountability. It is important to remember that LFORM is a COMMARFORLANT/COMMARFORPAC asset and the respective command should be consulted before its use.

Mission Load Allowance

MLA, designated the “Hotel” account, is class V(A) aviation ammunition designed to support the embarked Marine aviation combat element (ACE). Allowances are controlled by Commander, Atlantic/Pacific Fleet. The ship requisitions MLA, normally via an ammunition transaction report to the Naval Ammunition Logistics Center, Mechanicsburg, PA. Tailoring of the aviation MLA must be coordinated with the appropriate fleet commander via the ship’s chain of command. The ship’s ammunition administrator is responsible for all aspects of MLA account management.

Explosive Ordnance Disposal

The explosive ordnance disposal (EOD), or “Lima” account, is Navy ammunition designed to support the requirements of an embarked Navy EOD team. The EOD account allowance is controlled by COMNAVSURFLANT/PAC, with any change requests or recommendations requiring COMNAVSURFLANT/PAC and PHIBGRU approval. The ship requisitions EOD ammunition via an ammunition transaction report to the Naval Ammunition Logistics Center. The ship’s ammunition administrator is responsible for the requisition and all aspects of the EOD account.

Special Warfare

The special warfare (SPECWAR), or “Quebec” account, is Special Warfare Command (SPECWARCOM) ammunition designed to support the requirements of embarked Navy sea-air-land

teams (SEALs) and special boat units. The SPECWAR account allowance is controlled by SPECWARCOM, and any requests for tailoring or modification changes must be submitted to SPECWARCOM via COMNAVSURFLANT/PAC and the appropriate PHIBGRU. The ship requisitions SPECWAR munitions via an ammunition transaction report to the Naval Ammunition Logistics Center. The ship's ammunition administrator is responsible for all aspects of the account.

Shipfill

The shipfill, or "Alpha" account, is Navy ammunition designed to support the ship's own permanently installed armament, embarked Naval Beach Group units, authorized small arms and pyrotechnics. The allowance is established by COMNAVSURFLANT/PAC, and any request for changes or tailoring must be submitted to them via the appropriate PHIBGRU. The ship requisitions its shipfill via an ammunition transaction report to the Naval Ammunition Logistics Center. The ship's ammunition administrator is responsible for all aspects of account management.

Noncombatant Expenditure Allowance

Noncombatant expenditure allowance (NCEA) is ammunition allocated to the ship for its training, noncombat, and/or exercise expenditures. The allowance is established by COMNAVSURFLANT/PAC, and any request for changes or tailoring must be submitted to them via the appropriate PHIBGRU. The ship's ammunition administrator is responsible for all aspects of the account.

Marine Training Ammunition/ MEU Training Package

Marine Training Ammunition, or "X-ray" account, is Marine Corps-owned class V(W) ammunition embarked to support the LF's training exercises

during a deployment. The MEU commander identifies the size and composition of the Marine Training Ammunition package for each deployment, establishes major subordinate element allowances, and generates a spread-load plan (how the munitions will be divided between the ships of the ARG). The MEU then submits its plan to the appropriate MEF command element, which submits the ammunition requisitions on behalf of the MEU. Local procedures differ relative to Marine Training Ammunition reporting and accountability.

Most ships perform the normal receipt, stowage, and Retail Ordnance Logistics Management System induction, management, and reporting procedures associated with Marine Training Ammunition, while others rely on the embarked unit's ammunition representatives to accomplish Marine Training Ammunition administrative reporting. Detailed guidance on local procedures can be obtained from PHIBGRU/PHIBRON staffs.

It is recommended that all issue and receipt transactions be accomplished and documented in writing and that a record of all transactions be maintained for 6 months after the deployment. MEU ammunition representatives will require routine, escorted access to the ship's magazines for inspection and inventory of the Marine Training Ammunition stocks.

Standard Training Package

The Standard Training Package is aviation ammunition embarked to support the training requirements of an embarked Marine aviation squadron. Previously, squadrons were authorized to expend up to 10 percent of certain naval ammunition logistics codes (NALCs) for training purposes. This policy made it difficult for ship's ammunition administrators to accurately track authorized expenditures and contingency stock

levels, given that both were consumed from the same account. Standard Training Package allowances, tailoring, and ordering procedures are the same as those listed for MLA.

Allowances and Requisitioning Procedures

Requisitioning ammunition requires forethought and an assessment of the ship's long-range schedule. Anticipated expenditures should be taken into account when ordering ammunition for onload or top-off. The goal for deploying ships is 100 percent of allowance in all ammunition accounts. When the ship falls below 90 percent of its allowance(s), it must reorder mission fill ammunition. This does not apply to NCEA.

With the fleet combatant commander's approval, the COMNAVSURFPAC/COMNAVSURFLANT assigns allowances for shipfill, MLA, EOD, and SPECWAR, while COMMARFORLANT/COMMARFORPAC assigns LFORM allowances. Final allowances and tailored allowances are disseminated, via a serialized letter or naval message, from the assigning authority to each ship class, with special revisions added for any ship specific circumstances; i.e., squadron or MEU flag ship, SPECWAR, EOD, and SEAL detachments. Although the fleet combatant commander authorizes changes to allowances, the actual tailoring of allowances must be coordinated through the assigning authority and the appropriate PHIBGRU.

Approximately 60 days prior to the scheduled onload, the ship shall send an ammunition transaction report to Ammunition Materiel Management Office, Atlantic/Pacific (AMMOLANT/PAC), for all shortfalls and anticipated shortfalls per SPCCINST 8010.12. When determining the required delivery date, the ship should request that ammunition arrive at the onload site approximately 5 to 7 days before the first day of the scheduled onload. This allows the issuing facility adequate time to inventory, stage, and document the munitions.

Follow-up ammunition transaction reports, for unexpected requirements, may be submitted. Detailed requisitioning instructions and required lead times can be found in naval supply (NAVSUP), P-724, *Conventional Ordnance Stockpile Management Policies and Procedures Manual*.

Hazardous Class and Security Risk Categories

Ammunition is classified in the method by which it detonates. Naval Sea Ordnance Publication (NAVSEA OP) 4, *Ammunition Afloat*, illustrates the hazard classes of ammunition on pages 3-21 through 3-23. This document delineates the types of hazards and addresses compatibility with other classes of ammunition. During ammunition movements, the net explosive weight is based on the total net explosive weight, using the highest hazard class being handled. For example, 100 pounds net explosive weight of 1.4 ammunition being handled at the same time as 35 pounds net explosive weight of 1.2 would be considered 135 pounds net explosive weight of 1.2 explosives. The net explosive weight restrictions are based on the total net explosive weight allowed for 1.2 ordnance. Early identification of hazard classes, total net explosive weight, and restrictions for the onload/offload location will prevent problems during ordnance handling.

Most naval weapons stations or other ordnance activities base their munitions delivery schedules on security risk categories. (Some munitions products are far more sensitive and pilferable than other types of ammunition. Therefore, these activities want to limit accessibility and the amount of time these items are not in a secure storage environment.) The CCO and ship's weapons/ordnance officer should address the onload/offload sequence during joint planning sessions with the supporting naval weapons station/ordnance activity. The four security risk categories follow.

Category I

Category I (CAT I) is non-nuclear missiles and rockets in a ready-to-fire configuration or if jointly stored or transported with the launcher tube and/or grip stock and the explosive round, for example: Hamlet, Redeye, Stinger, Dragon, Javelin, Light Antitank Weapon (66mm), shoulder-launched multi-purpose assault weapon rocket (83mm), M136 (AT4) antiarmor launcher and cartridge (84mm).

Category II

Category II (CAT II) is missiles and rockets not in a ready-to-fire configuration that are crew-served or require platform-mounted launchers and other equipment to function. Included are rounds of the tube-launched optically tracked weapon and Hydra-70; hand or rifle grenades, high explosives and white phosphorus; mines, antitank or antipersonnel (unpacked weight of 50 pounds or less each); explosives used in demolition, C-4, military dynamite, and trinitrotoluene with an unpacked weight of 100 pounds or less; and warheads for sensitive missiles and rockets weighing less than 50 pounds.

Category III

Category III (CAT III) is missiles and rockets that require platform-mounted launchers and complex hardware and software equipment to function, such as the Hellfire missile; ammunition, .50 caliber and larger, with explosive filled projectile (unpacked weight of 100 pounds or less each); incendiary grenades and fuzes to high explosive grenades; blasting caps; supplementary charges, bulk explosives, detonating cord, and warheads for sensitive missiles and rockets weighing more than 50 pounds but less than 100 pounds each.

Category IV

Category IV (CAT IV) is ammunition with a non-explosive projectile (unpacked weight of 100 pounds or less each); fuzes, except for those listed in CAT III above; grenades (illumination,

smoke, and O-Chlorobenzyl-Malononitrile [tear gas]); incendiary destroyers, riot control agents, 100-pound package or less; explosive compounds of sensitive missiles and rockets (except warheads); and warheads for precision guided munitions weighing more than 50 pounds (unpacked weight).

Ammunition Compatibility and Load Plans

NAVSEA OP 4 provides detailed guidance on amphibious ship ammunition compatibility. Chapter 3 of NAVSEA OP 4 and appendix F of this publication provide ammunition compatibility charts that segregate common NALCs into their compatibility groups. Based on the compatibility groups of each individual NALC, load plans can be generated that conform to NAVSEA OP 4. See appendix F.

Inventories, Inspections, and Assist Visits

Inventories are required upon relief of the ship's CO; upon relief of the department head responsible for the items; and upon commissioning or deactivation. Security Risk Category II, III, and IV ammunition and explosives must be inventoried annually with all records retained by the command for at least 2 years. Sealed boxes need not be opened if there is no evidence of tampering. Any documentation pertaining to an inventory adjustment—to include missing, lost, stolen or recovered—will be retained for at least 4 years.

The ordnance handling safety and assistance team is an explosive handling safety assistance program for the purpose of monitoring explosive safety practices and materiel conditions incident to the handling, storage, and use of conventional weapons and explosives. An ordnance handling safety and assistance team visit is normally conducted at least once during each deployment cycle and prior to onloading ammunition. Ordnance handling safety and assistance team visits are scheduled

when requested by the command and are conducted on a not-to-interfere basis. Upon completion of each assist visit, the ordnance handling safety and assistance team will provide an oral out-brief to the ship's CO and a written report.

The mobile ordnance training team provides ship's ordnance personnel with handling, assembly, and fleet sentencing training. The ship will have personnel trained in sentencing since this provides the necessary qualifications for inspecting ammunition for proper packaging, documentation, and segregation. These are necessary skills when conducting onloads, offloads or backloads of ammunition products and when maintaining accurate inventories. Normally this training is offered/scheduled by COMNAVAIRLANT/PAC once a naval message request has been submitted by the ship, via COMNAVSURFLANT/PAC and the appropriate PHIBGRU.

Standard Ammunition Reports

Ammunition Shortfall Report

Upon completion of the initial LFORM onload, all ships are required to submit a monthly ammunition shortfall report per current COMNAVINST 4080 series. Responsibility for submission of this report lies with the ship's CCO and ordnance/weapons officer.

Ammunition Transaction Report

The ammunition transaction report is the automated process in which a message is generated by the ship's Retail Ordnance Logistics Management System computer and is transmitted via naval message to Naval Ammunition Logistics Center to update the Conventional Ammunition Integrated Management System database. Per NAVSUP P-724, an ammunition transaction

report must include receipts, issues, expenditures, and reclassifications affecting the ship's Navy ammunition accounts.

Transaction Item Report

The transaction item report is a computer file generated by the ship's Retail Ordnance Logistics Management System computer and transmitted via Streamlined Automated Logistics Transmission System to the Marine Corps Systems Command (MARCORSYSCOM) to update the Marine Corps Ammunition Accounting and Reporting System database. Per NAVSUP P-485, transaction item reports are submitted by the ships and include receipts, issues, expenditures, and reclassifications affecting the ship's LFORM account.

Report of Discrepancy

Per Chief of Naval Operations Instruction (OPNAVINST) 5530.13, *Department of the Navy Physical Security Instruction for Conventional Arms, Ammunition and Explosives (AA&E)*, a report of discrepancy should be sent any time a traceable seal is broken and/or the quantity or condition code on the document placed on the package does not match the actual quantity and/or condition code. This report of discrepancy should be specific as to the originator, seal number, stated quantity, actual quantity, and receipt date/location. Additional information relative to ammunition transaction reporting and report of survey actions is contained in OPNAVINST 5530.13.

Contingency Support Package Plans

A contingency support package is a self-contained package of ordnance designed to support a specific mission. The composition of a contingency support package is identified in the MEU combat instructions. At the confirmation briefings, a contingency package will be chosen. Due to the short lead-time

required to assemble contingency packages, it is necessary to sort various packages within the magazines to allow expeditious issue of ordnance. Once the MEU combat instructions are published, the ship's ordnance handling personnel should arrange the ordnance in the magazines to permit quick retrieval of the basic package, so that LF personnel can efficiently package the materiel and effect issue within 12 hours. In most cases, the basic contingency packages will contain similar items with varying quantities. Due to the rapid response sometimes required—especially for the Marine aircraft squadron—standard airborne packages should be readily accessible in 2 to 3 hours.

Onloads, Offloads, and Backloads

Ships should plan only two loads per interdeployment cycle. The initial load should include all shipfill, NCEA, SPECWAR, EOD, MLA, LFORM, and Marine Training Ammunition. The goal is to minimize further load requirements, and maximize range and depth with the initial onloads. The second onload, or “top-off,” includes any items that were not physically available during the initial onload, replenishment of NCEA, and

munitions that may have been affected by a notice of ammunition reclassification after the initial onload and prior to the top-off. The top-off may also include the offload of items affected by notices of ammunition reclassification.

After completing a major deployment and before entering the yard period for industrial maintenance, ships are required to perform a complete ammunition offload, except for a limited quantity of security munitions.

During deployment and upon completion of a training exercise, it may be necessary to backload unexpended ammunition. If this occurs, it is paramount that all munitions are properly accounted for, completely cleaned, certified clean by a preventative medicine technician, and repackaged in their original packaging materials, sealed with traceable leadwire seals, and tagged with appropriate condition code tags, prior to returning them to any ship's magazine. Lack of proper cleaning and certification before returning munitions to a magazine could result in agriculture certification problems upon return to the continental United States (CONUS). See chapter 5 for US Customs Service and agricultural washdown requirements.

CHAPTER 3

AMPHIBIOUS EMBARKATION PLANNING AND EXECUTION

It is essential that the LF embarkation officer and amphibious task force (ATF) CCO develop coordinated embarkation milestones to be included in the amphibious force's (AF's) deployment Plan of Action and Milestones. Embarkation milestones provide the baseline for all embarkation. Any changes to the published milestones must be coordinated through the commander, amphibious task force (CATF) and commander, landing force (CLF). See appendix G for embarkation reports.

Embarkation Planning Conferences

Embarkation planning conferences are announced and jointly run by the ATF CCO and the LF embarkation officer. For the typical ARG, this is the PHIBRON CCO and the MEU embarkation officer. When a ship deploys independently, the ship's CCO and the TEO perform these duties. Planners should conduct an initial, mid, and final embarkation conference. Recommended topics include:

- Embarkation and ammunition reporting requirements.
- Load plan preparation and submission requirements.
- International Organization for Standardization (ISO) container loading policy, constraints, and criteria.
- NSE lift footprint and assignment to shipping.
- LFORM/MLA loading status and forecasted top-off dates (Classes I, III, IV, and V A/W).
- Marine Training Allowance/MEU Training Package spread loading.
- Port of embarkation joint inspections.
- MOGAS storage capacities, retrograde capabilities, and safety considerations.
- The requirement for personnel working on the flight deck to be Aircraft Firefighting School trained and qualified.
- Aviation ground support equipment (AGSE) embarkation requirements.
- LF accommodations inspection timeline, reporting requirements, and methodology.
- M1A1 tank and M88 tank retriever planning.
- United States Customs Service (USCS) and United States Department of Agriculture (USDA) requirements.
- Landing craft mix and landing craft availability table (LCAT) development.
- Shipboard policies relative to planning, coordinating, and scheduling training.
- Contents and importance of the embarked troop regulations.
- Schedule of event development, submission, and modifications.
- Loading LF personnel, supplies, and equipment while in port.
- Compilation and distribution of command points of contact listings.
- Munitions cross-decking and retrograde policy development.
- Hazardous material embarkation requirements; e.g., lithium battery, MOGAS, sulfuric acid, calcium or hypochlorite.

There is one CCO per ship and one TEO per ship. All LF embarkation/debarkation matters should be directed to the CCO via the TEO. Before the planning conference, the CCO should—

- Provide the TEO with a copy of the ship's current SLCP (including Computer Aided Embarkation Management System diagrams).

- Have a personal copy with key points of interest highlighted onhand and plan time with the TEO for discussion.
- Walk the ship, allowing the TEO to make notes on printed deck diagrams of low overheads, monorail stowage areas, no stow areas, sounding tubes that require access, etc.
- Emphasize restrictions that must be considered when developing the load plan.
- Provide a detailed review of the diagrams with embarked elements followed by a ship's tour that will facilitate planning and aid in resolving questions on ship's capabilities.
- Provide the TEO with a copy of the ship's schedule.
- Provide copies of embarked troop regulations, digitized and/or hardcopy.
- Review SLCP and troop regulations.
- Review previous load plans.
- Review ship's policies and regulations.

During the initial embarkation conference, the TEO should provide an initial listing of anticipated personnel, supplies, and equipment to the CCO. This list and other information inform the command of the status of embark planning and allows command input and guidance.

The shipboard inspection of LF spaces should occur concurrent with the scheduled final embarkation planning conference. Also during this conference, the final load plan is presented for review and signature by the ship's CO. Prior to submitting the load plan to the ship's CO, the team embarkation commander/COT should have already signed the load plan. The TEO is responsible for the development of the detailed load plan. The CCO's function is to review the load plan and to ensure all of the appropriate department heads have had an opportunity to review and concur with its contents prior to the ship's CO's review and signature. It is important to note that changes to the signed/approved load plan require the concurrence of both the ship's CO and embarkation team commander.

When the ship deploys independently, the ship's CCO provides copies of signed/approved detailed load plans, with associated load plan documentation to the Navy chain of command. When ships are OPCON to an ATF, the ATF CCO obtains copies of each ship's signed/approved detailed load plan and distributes copies to the Navy chain of command.

Advance Party Composition

Embarking units should plan for advance parties to embark the ship 48 to 96 hours before loading. This provides time for training and familiarization with the ship before embarking the main body.

The billeting officer should receipt for troop linen, and inspect and sign for all required troop spaces. Once the LF space turnover process is complete, the billeting officer assumes responsibility for maintaining these spaces. Generally, he will have a representative from each unit or the senior man in each compartment sub-sign for their respective spaces.

Food service attendants and cooks should be embarked and integrated into their designated work areas. Food service attendants should be assigned for a minimum period of 30 days or the duration of the deployment (whichever is shorter). Mess physicals should be completed prior to embarking and presented to the ship's food service officer upon arrival of the advance party. It is highly recommended that all mess personnel be berthed in the same compartment when possible.

Each embarking unit should provide at least one Marine to act as a berthing guide. These guides are the key to all personnel settling in smoothly during the first days of embarkation. Berthing guides should—

- Berth personnel in their unit's area.
- Take personnel on at least three ship tours prior to embarkation of the main body.

- Issue apparel to readily distinguish them as a berthing guide (i.e., tape on cover, vest, etc.).
- Provide a diagram (ship SLCP) of the ship with unit berthing assignments indicated.
- Accomplish bunk assignments as required by their unit.
- Assign additional billeting guides for 48 hours after the main body is embarked.
- Assist in the issue/turnover/turn-in of linen.

The LF may be required to embark a portion or all of the guard force if supplies/equipment are loaded before the ship's scheduled arrival at the port of embarkation. This requirement should be addressed at the load planning conferences and documented in conference wrap-up messages.

The ship's platoon functions as a separate entity under the operational control of the CCO, as assisted by the TEO. Once organized, it should remain intact during the entire period the embarkation team is deployed due to safety equipment (safety boots), training, and certification requirements.

The ship's platoon should embark at least 48 to 96 hours before loading or receiving any cargo. Portions of the ship's platoon will embark before the advance party; e.g., when cargo and equipment are loaded pierside before the remainder of the advance party arrives. Figure 3-1, on page 3-4, shows a recommended ship's platoon organization.

The ship's platoon is not a replacement for the ship's 1 Alpha personnel. The ship's platoon is an augmentation force whose mission is to assist ship's company personnel during LF cargo and equipment stowage, embarkation/debarkation, and administrative movement operations. Upon arrival, the ship's platoon will receive detailed training and instruction in their respective duties. Normally, the ship provides nearly all of the safety/protective equipment while the LF provides steel-toed safety boots. The following

breakdown provides examples of the duties normally performed by the ship's platoon.

Ship's platoon personnel will be assigned to the flight deck in accordance with the ship's troop regulations. Examples of the duties normally performed by flight deck ship's platoon personnel include—

- Verifying passenger manifests for helicopter transport.
- Acting as passenger guides for heli-teams to/from helicopters.
- Assisting passengers with baggage/cargo.
- Recovering cranials/life preservers from helicopters and delivering to passengers.
- Briefing passengers on boarding sequence and aircraft safety procedures.
- Ensuring all cargo and equipment arriving/departing is accounted for.
- Ensuring that the owning unit has properly prepared the cargo for movement.
- Integrating with ship's crew and fighting fires on the flight deck.
- Operating shipboard forklifts (only if required; requires the approval of the ship's CO; operators must be properly licensed prior to operating shipboard forklifts).

Ship's platoon personnel will be assigned to the well deck in accordance with the ship's troop regulations. Examples of the duties normally performed by well deck ship's platoon personnel include—

- Verifying passenger manifests for landing craft transport.
- Supervising onload operations to ensure vehicles and cargo are placed aboard ship in accordance with the approved load plan.
- Ensuring that all vehicles and cargo are properly lashed and secured for sea.
- Validating vehicles and cargo loaded to ensure compliance with the approved load plan.

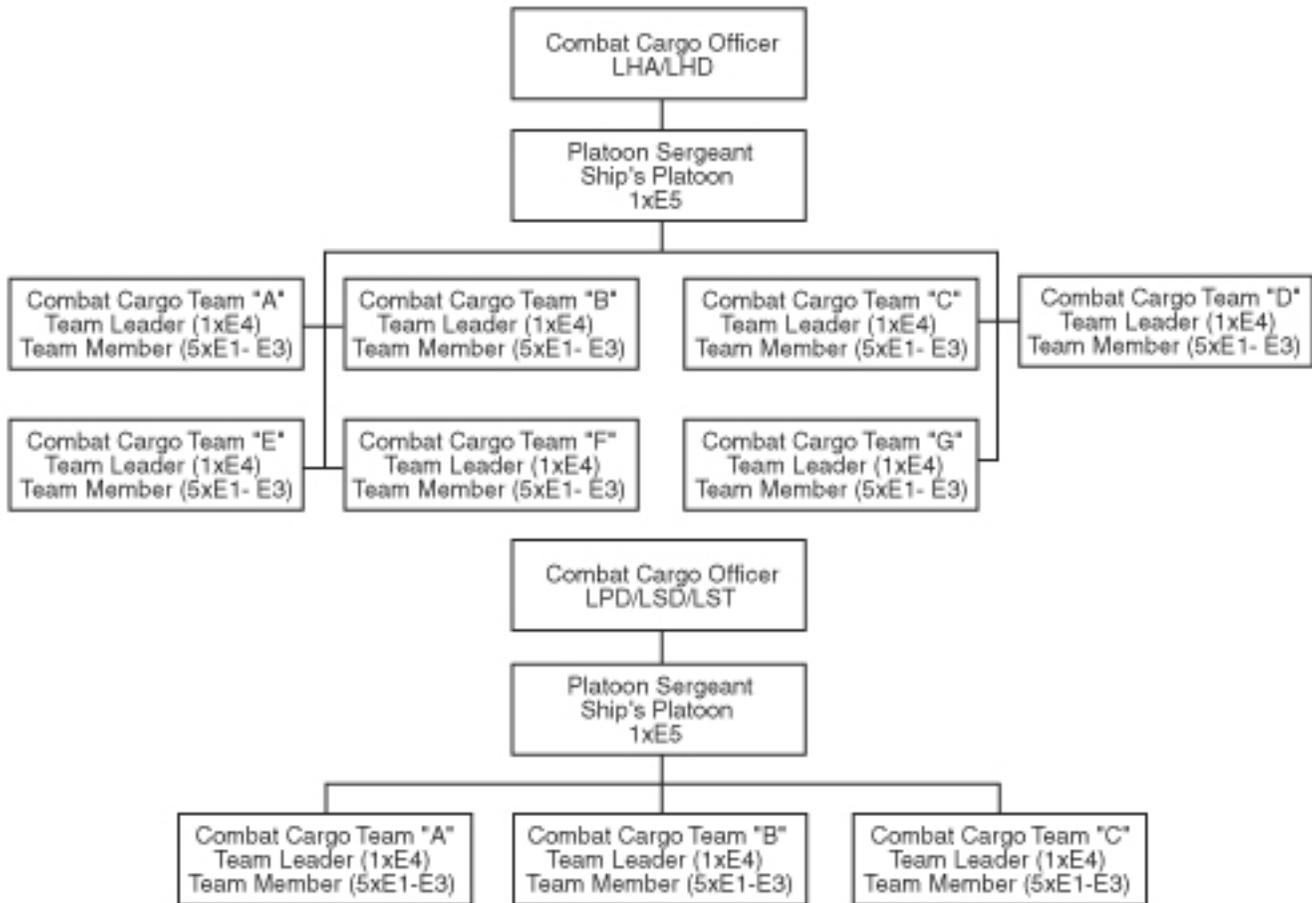


Figure 3-1. Ship's Platoon Organization.

- Inspecting vehicles to ensure mobile loads, tarps, etc., are properly secured prior to landing craft air cushion (LCAC) transport.
- Ensuring all cargo and equipment arriving/departing is accounted for and ensuring that the responsible unit has properly prepared the cargo for movement.
- Observing activities in the vehicle and cargo stowage areas ensuring that vehicles and cargo are properly secured during and after daily operations.
- Contacting the unit representatives to correct equipment discrepancies.
- Operating shipboard forklifts (only if required; requires the approval of the ship's CO; operators must be properly licensed before operating shipboard forklifts).

Shipboard Coordination

A joint meeting between the ship and embarking LF elements should be conducted before cargo loading/offloading to discuss areas of concern and to address areas of support. Recommended topics include:

- Personnel augmentation requirements.
- Communications.
- MHE readiness, availability, and current locations.
- Safety.
- Cargo handling systems.
- Securing of cargo/vehicles.
- Traffic routes.

- Loading/offloading points.
- Types and amount of cargo/vehicles with an emphasis on those requiring special handling/stowage considerations.
- Operational checks of cargo handling equipment/systems 24 hours prior to load/offload.

Cargo Loading Before Embarkation

Units may desire to load palletized cargo and maintenance vans prior to the scheduled embarkation date. If so, some key points to coordinate include:

- An advance echelon to assist in stowage of material.
- Delivery date and time.
- Delivery location.
- Coordination with base security for clearance and routing of vehicles on base.
- Crane and MHE support. The Fleet and Industrial Supply Center, Norfolk, VA; Public Works Center, San Diego, CA; and Commander, Fleet Activities, Okinawa, Port Operations, White Beach, should be included in all discussions and message traffic relative to onload support and requirements.

Final Staging

A pre-embarkation inspection in the staging area at the port of embarkation is the final chance to prevent problems from occurring during embarkation. Combat cargo and LF embarkation personnel should inspect equipment for proper preparation, condition, and hazardous material identification/verification at least 24 hours before loading. Figure 3-2, on page 3-6, is a sample vehicle inspection checklist.

Vehicle fuel tanks should not exceed three-fourths full. Trailer mounted (towed-load) items should not exceed one-half tank full of fuel, however, there may be items that must be empty due to stowage location (stowed on ramp) or understowed (tongue on deck) in which fuel can leak or slosh out. Each vehicle must have its own installed lifting devices. Five-gallon fuel cans will be filled with MOGAS or empty. If they are filled, a seal must be affixed; if empty, they should be certified gas free.

Pallets must have four-way access, be clean, serviceable (pallet wings) for sling hoisting, and properly banded.

Container express boxes/quadruple containers (QUADCONS) should be serviceable and with no hazardous material inside. The weight must be accurate. Remember, if it has to be moved aboard ship, ship's forklifts normally have a 6,000-pound maximum capacity.

All cargo must be free of fuel unless designated as POL. As an example, field ranges are known to have some residual fuel in their tanks.

Hazardous Material

The four hazardous materials embarked by the LF that cause the greatest concern are—

- Lithium batteries.
- Sulfuric acid.
- Fuel (kerosene, white gas, MOGAS).
- Calcium hypochlorite.

Vehicles must be staged to support the embarkation plan.

Hazardous materials must be properly identified (a problem exists when embarking units do not advise the ship of what hazards they are embarking).

SHIP: _____ EXERCISE: _____ DATE: _____

Nomenclature							
Serial Number							
Placard. Contains landing serial, priority number, driver name, and owning unit.							
Fluid Leaks. No leaks.							
Tire Pressure. Within prescribed limits.							
Vehicle Start-Up. Starts without external support or aid.							
Brakes. Operational.							
Emergency Brake. Operational.							
Fuel Level. 3/4 prime mover, 1/2 trailer-mounted equipment. Some items with fuel tank cap in front must be empty. Fuel trucks/SIXCONS empty.							
Height. Does not exceed the maximum height of its intended stowage location.							
Lashing Points. Ensure all shackles/cotter pins are in place and serviceable.							
Cargo/Mobile Loads. Lashed with minimum 1/2 inch rope or cargo straps.							
Pintle Hook. Operational with cotter pin and chain attached.							
Vehicle Doors are Secured. Removable doors must not come off during LCAC operations.							
Tarp/Canvas Lashing. Secured at all prescribed points.							
Vehicle Cleanliness. Free of dirt, mud, insects, and trash.							
Fuel Cans. Stored in approved racks permanently installed on vehicle.							
Towed Loads. Within the prescribed weight rating for the prime mover.							
Shoring. On-hand for all tracked vehicles, trailer tongues, and other special equipment.							
Hazardous Cargo. Secured, authorized, and identified on signed load plan.							
Fire Extinguishers. Stored in approved vehicle-mounted racks.							
Vehicle Lights and Horn. Operational.							
Water Trailers. Empty.							
Windshield/Side Mirrors. Serviceable.							
Vehicle Weight. Vehicle does not exceed rated cross-country weight.							

Figure 3-2. Sample Vehicle Inspection Checklist.

Embarkation Day

CCO/CCA's are advisors. Deck department, assisted by the ship's platoon, is responsible for—

- Moving, placing, and securing of cargo in accordance with the load plan. The CCO and TEO must approve deviations to the plan. Once the onload is complete, the TEO is responsible for providing updated load plans to the CCO.
- Guiding and stowing all vehicles in accordance with the approved load plan using vehicle guides; no vehicles moving without the guides.
- Ensuring assistant drivers will be in the vehicle during loading or unloading operations.

The TEO/team embarkation assistants and CCO/CCA should be in the area of cargo/vehicle loading to resolve any issues that may arise.

Problems will occur and adjustments to the load plan are possible. Knowledge of embarkation, proper preparation of the embarking unit's supplies and equipment, and familiarization of the ship are paramount.

Only those items that have been inspected and are included in the signed and approved load plan are loaded.

The CCO keeps the ship's CO/XO informed of the onload/offload status.

ATF mandated reports are submitted in a timely manner. This normally includes the personnel, cargo, vehicle, and estimated time of completion report.

Vehicle and Cargo Lashing Material

Vehicles and cargo are lashed to protect the ship, cargo, and personnel. This requires that the ship's lashing equipment be in proper working condition.

Ensuring this material is in good repair is a responsibility of the ship's deck department. Ensuring the correct number of lashings is onboard and in serviceable condition is required prior to deployment. This information is critical when evaluating load plan supportability.

Stowing Vehicles on Inclined Decks or Ramps

For LPD/LSD class ships—

- No vehicles (wheeled or tracked) shall be stowed on any fixed ramps.
- No vehicles shall be stowed on any removable and/or portable ramp.
- Within structural design limitations, vehicles will only be stowed on hinged (between decks) ramps when they are in the raised/up position and locked.
- No vehicles shall be permanently stowed on the false beach.

For LHA/LHD class ships—

- No tracked vehicles shall be stowed on any fixed inclined deck or ramp.
- Within structural design limitations, vehicles will only be stowed on hinged ramps when they are in the raised/up position and locked. The temporary storage or parking of vehicles on hinged ramps is authorized provided the ship's SLCP specifically authorizes such action. This temporary storage/parking is normally accomplished to support selective offload or load reconfiguration requirements.
- No vehicles shall be permanently stowed on the false beach. Specific weight limitations associated with the temporary parking of vehicles/equipment on the false beach must be addressed in the SLCP.
- (LHA only) No wheeled vehicles may be stowed between frames 83 and 93 on the inclined portion of the third deck.

Auxiliary 5-Gallon MOGAS Can Storage Precautions

Auxiliary cans must be stowed in permanently attached auxiliary 5-gallon MOGAS can storage racks or other authorized areas approved by the ship CO.

Auxiliary 5-gallon MOGAS cans must be certified and comply with MIL-C-1283E.

After filling with MOGAS, cans are inspected to assure no leaks. Seals are applied to cans to aid in detecting loosened caps or tampering.

After operations ashore, used fuel cans shall be refilled (when possible), inspected, and sealed before embarking. Empty fuel cans must be certified gas free; partially filled cans will not be embarked.

MOGAS shall not be transferred to or from 5-gallon auxiliary cans while aboard ship unless specifically authorized in the SLCP and only after coordination with the appropriate ship's department heads.

International Standards Organization Containers

The International Safe Container Act, outlined in Public Law 95-208, requires that new and existing ISO-configured equipment and containers meet the Convention for Safe Containers (CSC) certification requirements. This means that all ISO equipment and containers, military van (containers) (MILVANS), QUADCONs, mobile maintenance facility vans, and shelters must meet the mandated CSC Certification requirements or they will not be loaded.

Compliance with this requirement is evidenced when viewing CSC safety approval plate, located on each item. Placement of a valid DD Form 2282, *Reinspection Decal Convention for Safe Container*, on the approval plate confirms its structural

serviceability. Specific inspection and certification criteria are contained in MIL-HNDBK-138A.

In addition to the above safety and certification requirements, the following prohibitions also apply:

- Commercial ISO containers, which are not part of embarking units organic assets, will not be loaded. This prohibition includes all containers, especially those 20-foot in length or greater.
- Embarking units, which have organic specialized maintenance containers, field logistics systems modules, e.g., six containers together (SIXCONS) or MILVANS, may load these assets aboard assigned shipping. However, the preferred method for embarking these assets is in the mobile loaded configuration.
- Certified/approved containers may be deck loaded provided they do not exceed 10,000 pounds and the LF embarks organic MHE capable of loading and offloading these assets.
- QUADCONs are the only container assets approved for double stacking aboard amphibious shipping. When double stacked, the QUADCONs must be secured/lashed in accordance with the Naval Sea Systems Command (NAVSEASYS COM) prescribed procedures (PEO CLA Washington DC// PMS377// 011150Z Apr 97). Embarking units must observe minimum clearance restrictions and maintain the prescribed distances between the top of the QUADCONs and the installed fire fighting systems as defined in the SLCP.
- Individual QUADCONs shall be secured to the deck with four 35K lashings.
- Double-stacked QUADCONs should also use four 35K lashings if they are a single tier.
- A pair of double-stacked QUADCONs shall be secured to the deck using four 70K lashings. All lashings shall be crossed at 45 degrees to the deck.
- Side-by-side stacks of double-stacked QUADCONs shall be joined together with Peck and Hale container conlinks (Model No. CTC1012) or the standard ISO horizontal/vertical connectors (often

referred to as “pineapples”). These connectors are normally fielded as a component of the QUADCON. The 70K and 35K lashings should be connected to the QUADCONs using a Peck and Hale plug hooks (Model No. H159) or an equivalent hook. Another alternative is to run the chain through the ISO corner fitting.

Tank and Tank Retriever Planning

In 1990, NAVSEASYS COM conducted a structural analysis of LHA, LHD, LPD, LSD (36/41/41 aircraft carrier [CV]), and landing ship, tank (LST) class ships to determine their capability to embark and transport the M1A1 tank and M88 tank retriever. Figure 3-3 summarizes the MARCORSYS COM weight data for the embarked and combat ship-to-shore planning weights for the M1A1 tank.

The NAVSEASYS COM structural analysis was conducted using the weights reflected in figure 3-3 and appropriate ship motion factors. It was assumed that parking of the M1A1 tank will occur during storm sea conditions and that traversing will occur in sea state 3. The results of this analysis indicate that parking and traversing operations can be accomplished as indicated in figure 3-4, on page 3-10.

Project Handclasp Materials

Project Handclasp is a people-to-people program administered by a San Diego-based project office. Material used by this program is obtained from a variety of private sector sources (industrial, civic, religious, and individuals). It is then carried overseas on Navy ships on a space-available basis. Material donated to Handclasp includes paint and painting supplies; educational materials (books and school supplies); medical equipment, supplies, and nonnarcotic medicines; food; clothing; and sewing machines.

These materials have stowage requirements that are not normally included during load plan development. All Handclasp materials must be stowed in covered/secured areas. They cannot be stowed on the weather decks, tied down to the main deck or stowed in any open area. These restrictions may limit the amount of material requested. If the ship initiates the request for Handclasp materials, the CCO can coordinate with the ship’s SupO, chaplain, and XO with regards to space/storage limitations. If the material is requested by an external organization/agency, the ship will have to inform both the Director, Project Handclasp and the requesting activity of the space limitations. This will allow the package to be tailored and preclude unnecessary shipping expenses.

	EMBARKED WEIGHT (lbs)	SHIP-TO-SHORE WEIGHT (lbs)
Factory Configuration	124,950	124,950
75 Percent Fuel Load	2,666	2,666
B11 and Collateral Equipment	1,243	1,243
Deep Water Fording Kit	315	315
Crew	0	837
Main and Subcaliber Ammo	0	3,003
Organizational Equipment	0	1,219
Total	129,174	134,223
Short Tons	64.59	67.12

Figure 3-3. Planning Weights for the M1A1 Tank.

CLASS SHIP	LOCATION	EMBARKED WEIGHT PARKED/TRAVERSING	SHIP-TO-SHORE WEIGHT PARKED/TRAVERSING
LHA 1	Well Deck	Y/Y	Y/Y
	3d Deck FR 42-65	Y/Y	N/Y
	3d Deck FR 65-89	Y/Y	Y/Y
LHD 1	Well Deck	Y/Y	Y/Y
	3d Deck	Y/Y	Y/Y
LPD 4-6	Well Deck	Y/Y	N/Y
	3d Deck	N/R1	N/N
LPD 7-15	Well Deck	Y/Y	Y/Y
	3d Deck	N/R1	N/N
LSD 36	Well Deck FR 52-105	Y/Y	Y/Y
	Well Deck FR 105-184	N/R1	N/N
	Well Deck FR 184-270	Y/Y	Y/Y
LSD 41-43	Well Deck FR 35-42	Y/Y	Y/Y
	Well Deck FR 42-67	R2/Y	R2/Y
	Well Deck FR 67-74	Y/Y	Y/Y
	Well Deck FR 74-98	R2/Y	R2/Y
	Well Deck FR 98-145	Y/Y	Y/Y
LSD 44-48	Well Deck	Y/Y	Y/Y
LSD 41 (CV)	Well Deck	Y/Y	Y/Y
	Ramp to 2d Deck	N/Y	Y/Y
	2d Deck	Y/Y	Y/Y
LPD 17	Well Deck	Y/Y	Y/Y
	Ramp to 2d Deck	N/Y	N/Y
	2d Deck	Y1/Y	Y1/Y

Y - The deck is certified structurally without restrictions.

N - The deck is not certified structurally.

R1 - The tank may traverse over the area when the ship is pierside or close to shore under calm sea conditions only.

R2 - Tanks may be positioned two abreast symmetrically about the ship's centerline. Tanks must be centered on frames 50, 60, 80, and 90.

Y1 - The M1A1 tank is certified for parking on the hinged ramp going from the 2d deck (main vehicle deck) to lower vehicle provided the ramp is in the up and locked position.

Figure 3-4. Shipboard M1A1 Tank Stowage Limitations.

The director's office will forward a letter before receiving the Handclasp materials. The letter will provide detailed information as to the quantity and types of material being shipped and the shipping configuration. This data provides the necessary physical characteristics (length, width,

height, and weight) of each pallet to effect load planning. The letter will also include a copy of the appropriate transportation control and movement document for each shipment. The transportation control and movement document also provides the details on transportation modes and

container/seal numbers for the materials. Normally, this material is shipped to the Fleet and Industrial Supply Center at the respective naval base for further transfer to the ship.

Noncombatant Evacuation Operation Package

On occasion, ships may embark a noncombatant evacuation operation (NEO) package. Normally, the ship's SupO controls the ordering, receipt, and storage of this package and its distribution. The ship's CCO should contact the SupO early in the planning stages to determine if such a package will be embarked and gauge the potential impact on the load plan. At a minimum, the CCO should provide the TEO with a detailed list that defines the

NEO package composition and storage location, thus aiding in LF operational planning.

Consult the Safe Engineering and Operations (SEAOPS) Manual Volume III to determine M1A1 tank loading procedures for LCAC. This same instruction will also outline the lashing procedures and restrictions imposed when parking an LCAC on its fly-over blocks. An important note is that all ship classes are structurally capable of transporting preloaded M1A1 tanks on LCACs parked in the well deck up to a sea state of 8.

Currently, the landing craft, utility is restricted from carrying more than two M1A1 tanks.

The constraints and load limitations outlined in the preceding paragraphs also apply to the M88 tank retriever.

CHAPTER 4

SHIP-TO-SHORE MOVEMENT

STS movement is designed to ensure the rapid landing of troops, equipment, and supplies at the prescribed times and places and in the formation required by the LF to support the scheme of maneuver ashore.

With an approved concept of operations ashore, LF and ATF requirements to accomplish the AF mission are consolidated and compared with the means available to CATF (forces, lift, logistics, etc.). If means available do not satisfy requirements, additional means are requested from higher authority or the concept of operations is adjusted accordingly.

STS movement begins with the landing of the first scheduled wave and ends when unloading assault shipping is completed. This movement is divided into the assault and initial unloading period and the general unloading period. The first period is primarily tactical and must be instantly responsive (selective unloading) to LF requirements ashore. The second period is primarily logistical and emphasizes speed and volume.

The landing plan is prepared after final allocation of means is made. It is composed of ATF and LF documents that provide detailed instructions for executing the helicopterborne and waterborne movement. It consists of the movement, supporting fire, and combat service support (CSS) plans. The principal determining factor when developing the landing plan is the concept of operations ashore. As the basis for the landing plan, the concept of operations ashore is influenced by many factors; e.g., intelligence on enemy dispositions, the combat power available, and the available landing zones (LZs). The concept of operations is the basis on which all subsequent, inverse planning for the amphibious operation as a whole is predicated.

The STS movement plan must support the LF scheme of maneuver by landing the right units, equipment or supplies at the right place at the right time. Planning considerations are:

- Means.
- Beaches and landing zones locations.
- Assault waves composition.
- Tactical integrity of the LF.
- Assault shipping dispersal.
- Assault waves timing.
- Oceanographic features of beach approaches.
- Beach capacity for moving supplies to support the landing plan.
- OTH or near shore launch.

The STS movement plan is issued by CATF and CLF as an appendix to the operation order, message operation order supplements or an Allied Procedural Publication 4, *Allied Tactical Messages (U)*, formatted message such as the operational tasking amphibious.

Landing Serials

Discussion of the movement consideration listed below requires a detailed knowledge of landing serials. A serial is a troop unit or grouping of supplies and equipment that are to be—

- Embarked entirely in one ship.
- Landed as a unit on a specified beach, craft landing zone (CLZ) or helicopter landing zone (HLZ).
- Landed at the same time.

Serial numbers act as codes to identify grouping of units or equipment; provide speed, brevity, and security in communication; and to verify that all elements ordered to land are landed.

Serial numbers are a means of identification—not a statement of priority—and are published in the serial assignment table, which is included in the landing plan. The planned order for landing serials is published in the landing sequence table of the landing plan. It is an arbitrary number assigned to identify each element of the LF, in either the assault echelon or assault follow-on echelon, to be landed before general unloading commences.

Supply Categories and Movement Categories

STS movement of LF troops, supplies, and equipment is broadly classified as waterborne movement and helicopterborne movements. For convenient reference in planning and to promote flexibility during its execution, two categories of supplies and five categories of movement are employed.

Supply Categories

Landing Force Supplies

LF supplies are all supplies and equipment that accompany the LF in assault echelon and assault follow-on echelon shipping and comprise the projected initial supply support to sustain the LF until arrival of resupply in the amphibious objective area (AOA). This supply category is further broken down into basic loads, pre-positioned emergency supplies, and remaining supplies.

Basic loads are types and quantities of supplies that the commander directs the unit to carry. Basic loads are often referred to as D-1 supplies.

Pre-positioned emergency supplies replenish early in the assault. They may be further broken down into floating dumps that can be delivered by surface craft or helicopter.

Remaining supplies are the major portion of supplies from the assault echelon and assault follow-on echelon. They are mostly unloaded during

general unloading and may be used to build dumps ashore.

Resupply consists of the supply support transported into the AOA by follow-on shipping subsequent to the landing of the assault echelon and assault follow-on echelon shipping. Resupply also includes host-nation and inter-Service support in on-call status from aircraft or ships.

Floating Dumps

Because of the limited amount of combat supplies initially loaded, it is necessary to replenish supplies ashore soon after the assault begins. This need is met by establishing floating dumps in proximity of beaches. Floating dumps consist of propellant, balanced loads of emergency supplies in landing craft, helicopters or amphibious vehicles that are landed on request. Once these stocks are landed, the requirement to immediately reconstitute like packages may surface.

Movement Categories (Troops and Equipment)

Scheduled Waves

Scheduled waves transport the initial assault elements of the LF (i.e., battalion landing team) with their basic loads of equipment and supplies via surface craft, helicopter or a combination of the two modes. The time, place, and formation for the AF landing are predetermined jointly by the CATF and CLF. For helicopterborne movement, scheduled waves may require multiple lifts to completely land the helicopterborne assault elements. The assault schedule and helicopter employment and assault landing table (HEALT) represent the two source documents for identifying scheduled wave composition, timing, and sequencing.

On-call Waves

On-call waves consist of the elements of the LF and their initial combat or emergency supplies whose need ashore at an early hour is expected, but whose time and place of landing cannot be

accurately predetermined. They are elements subject to immediate or emergency call and are positioned so as to be available for landing shortly after H-hour. Because the units in on-call waves have a high priority for landing, their number should be kept to a minimum consistent with transportation asset availability and expected requirements ashore. The landing of any other elements may be preempted to permit the landing of on-call waves.

Nonscheduled Units

Requested by serial number, nonscheduled units are not landed until requested and normally not loaded until requested. They are second in priority for use of helicopters. The need for such elements ashore is usually not of an emergency nature. Therefore, they are landed when their employment ashore is appropriate, normally upon completion of scheduled landings. Once started, landing of nonscheduled units may be interrupted to permit landing of on-call waves, pre-positioned emergency supplies or other selected supplies or equipment for which there is a greater requirement ashore. This category can include combat, combat support, and CSS elements of the LF not included in the scheduled or on-call waves. Examples are LF reserve, general support artillery, LF support party elements, antiaircraft units, aviation ground support units, headquarters elements of LF ground combat, aviation combat, and CSS elements.

Pre-positioned Emergency Supplies

Pre-positioned emergency supplies are designated by the CLF to meet expected critical needs for supply replenishment. These supplies are available for immediate delivery to units ashore. This category is further divided into floating dumps (surface ship to shore) and pre-staged helicopter-lifted supplies. Pre-staged helicopter-lifted supplies are prepackaged units of selected supplies that are positioned aboard helicopter transports and other suitably configured ships for rapid air

delivery to units ashore. They may be employed in support of both helicopterborne and surface assault units.

Remaining Landing Force Supplies

This category is comprised of replenishment supplies and equipment not included in the unit commander's prescribed loads, floating dumps or pre-staged helicopter lifted supplies. It constitutes a major portion of the supplies transported into the area of operation in assault echelon and assault follow-on echelon shipping. LF supplies are selectively delivered ashore until prescribed dump levels are reached. The bulk of the remaining supplies are landed during general unloading.

Landing Plan Documents (Surface Assault)

Listed in the order they are prepared, these documents represent the end-state of detailed, integrated, and concurrent planning between the LF and ATF staff. Preparing these documents cannot occur until the LF concept of operations is completed and the number and type of landing craft and amphibious vehicles are identified. Each document details how the assault will be conducted. Landing force planning documents for STS movement are enclosures and tabs to appendixes of annex R to the LF operations order.

Assault Area Diagram

This diagram is an AF overlay developed by the ATF. It is drawn to an appropriate level scale to support the charts being used and identifies—

- Beach designations.
- Boat lanes.
- Landing ship areas.
- Transport areas.
- LCAC lanes, penetration points, and LZs.
- Line of departure (LOD).
- Fire support areas in vicinity of boat lanes.

Transport Area Diagram

This diagram is an overlay also prepared by the ATF. It covers the area extending from at least 1,000 yards off the beach to the seaward edge of the outermost anchorage/operating area. It contains—

- Transport area and anchorage assignments.
- Landing ship areas and anchorages.
- Boat and approach lanes.
- Amphibious assault vehicle (AAV) launch areas.
- LCAC launch area and lanes.
- LCAC LZs.
- LHA/LHD/amphibious assault ship areas.
- Control ships.
- Line of departure.
- Causeway areas.
- Control/penetration points.

Sea Echelon Plan

Prepared by the ATF, this plan shows—

- Individual ship sea echelon areas.
- Primary control officer (PCO) stations.
- LHA/LHD areas.
- Fire support areas.
- LCAC launch areas and lanes.
- LCAC LZs.
- Swept lanes.
- LODs.
- In-bound/out-bound lanes.
- Beach designations.
- Control and penetration points.

Landing Diagram

Prepared by the LF, this diagram provides information on the tactical deployment of units for the beach assault by showing the timing and composition of scheduled waves.

Landing Craft and Amphibious Vehicle Assignment Table

This table, prepared by the LF, indicates the organization of LF units into boat teams and the assignment of boat teams to scheduled waves, on-call waves, and nonscheduled units.

Landing Craft Availability Table

This table, prepared by the ATF, shows—

- Type and number of landing craft available by ship.
- Total number of landing craft required supporting Navy requirements.
- Total number of landing craft available for LF use.

Amphibious Vehicle Availability Table

Prepared by the LF, this table lists the type and number of amphibious vehicles able for assault landings and the ship in which they are embarked.

Serial Assignment Table

Prepared by the LF, this table provides a sequential numerical list of the serial numbers. Within each serial number it identifies the specific personnel, supplies, and equipment linked to that serial and the anticipated landing craft requirements to move that serial. The serial assignment table is not to be interpreted as the offload sequence. The assault schedule and landing sequence table provide this information.

Landing Sequence Table

Prepared by the LF, this table provides the anticipated landing sequence of nonscheduled units (those not listed in the assault schedule).

Assault Schedule

Prepared by the LF, the assault schedule prescribes the formation, composition, and timing of waves landing over beaches. Both assault and on-call serials are reflected.

Landing Craft Employment Plan

This plan is prepared by the ATF and assigns movement of landing craft from ships to satisfy naval and LF requirements. It indicates the number, type, and parent ship of landing craft assets and the ships to which they report, time to report, and period or duration of the attachment. It also allocates boats to boat waves in accordance with the landing diagram.

Amphibious Vehicle Employment Plan

Prepared by the LF, this plan reflects the planned employment of AAVs in landing operations to include their employment after the initial movement to the beach.

Approach Schedule

Prepared by the ATF, this schedule indicates, for each scheduled wave, the time of arrival at and/or departure from the parent ship, the LOD, and the beach.

Assault Wave Diagram

Prepared by the ATF, this diagram reflects the assault waves, as they will appear at H-Hour through the completion of all scheduled waves.

Beach Approach Diagram

This diagram is actually a large-scale chart overlay prepared by the ATF that covers from the beach to 300 to 500 yards seaward of the LOD. The diagram includes the designation and dimensions of landing beaches, LOD, distances to beach, position of primary control ship (PCS), secondary control ship, boat group commander, assistant boat group commander, etc., after the

last scheduled wave has landed, the position of personnel and cargo, transfer lanes and boats, and the boat return lanes.

Consolidated Landing and Approach Plan

This plan is nothing more than a consolidation of the landing craft employment plan and the approach plan. It is used in lieu of two separate documents and is prepared by the LF.

Debarkation Schedule

The ship's CO and the COT prepare this schedule jointly. It assigns debarkation stations to all personnel, establishes boat and helicopter teams, and includes units loaded via the well deck.

Landing Plan Documents (Helicopter Assault)

Helicopter Availability Table

This table is prepared early in the planning phase to provide LF and helicopterborne unit commanding officers with basic information with which to determine the employment of available helicopters. It identifies the helicopter units, number of helicopters available for first and subsequent lifts, tentative load capacity, and ships on which the helicopters are to be transported.

Available figures pertain only to D-Day operations and include estimates of expected losses to helicopter availability due to maintenance factors and enemy action.

Originally prepared by the senior helicopter unit commander and submitted to CLF for inclusion in the landing plan.

Heliteam Wave and Serial Assignment Table

This table is prepared by the commander of the helicopterborne unit, assisted by the helicopter unit commander, in coordination with the ship's commanding officer. It identifies each heliteam

with its assigned serial number and specific serial numbers within the flight and wave. All movement/landing categories are included with scheduled waves organized into helicopter waves and listed in numerical sequence and on-call and non-scheduled serials listed in the planned sequence of landing following the scheduled waves. If necessary, prepackaged supplies may also be serialized and included. This document shows what personnel, supplies, and equipment will be loaded on a specific aircraft. Loads for each helicopter are defined by—

- Tactical units (troop units).
- Supplies and equipment. The average combat load is 240 pounds for each Marine. Any particularly heavy equipment or supplies are listed separately in this column. The weight column ensures that troop units do not exceed maximum helicopter payloads.

Preparations are necessary to determine effective use of helicopters, detail lift requirements, and develop a planned sequence of debarkation and serialization of the units involved.

Helicopter Landing Diagram

This diagram is a graphic depiction of the approach and retirement lanes from the helicopter transport area to the LZs. It includes the measures established to control the helicopter movement. Such details and remarks, as are necessary, will also be shown (such as flight altitude and width of lanes).

The diagrams are prepared by the senior helicopter unit commander in coordination with the cognizant helicopter transport group/unit commanders and are submitted through the chain of command to the CATF for approval and coordination with planned supporting fires.

Control measures included in the helicopter landing diagram follow. See figure 4-1.

Landing Zones

LZs are specified ground areas for landing assault helicopters to embark or debark troops and/or cargo. Each LZ may contain one or more landing sites. They are usually designated by a code name, traditionally a bird.

Landing Site

A landing site is a subdivision of an LZ where single flights or waves of helicopters land. Landing sites do not have to be geographically continuous. They are usually designated by a color.

Landing Point

This is the point where one helicopter may land and is designated by a two-digit number.

Approach and Retirement Routes

These routes consist of a track or series of tracks relative to the earth's surface over which helicopters move to and from a specified LZ in coordination with fire support plans. They are located so as not to interfere with the waterborne movement and are designated by the names of states.

Wave Rendezvous Points

Wave rendezvous points (RPs) are positions designated for assembling loaded helicopters when conducting operations. These points are located at a given altitude and position relative to the departure point (DP).

Departure Point

The DP is an air control point at the seaward end of the helicopter approach route system from which helicopter waves are dispatched along the selected approach route to LZ.

Penetration Control Point

The penetration control point (PCP) is a point along helicopter approach route at which helicopter waves penetrate a hostile coastline during the STS movement. Once an aircraft reaches

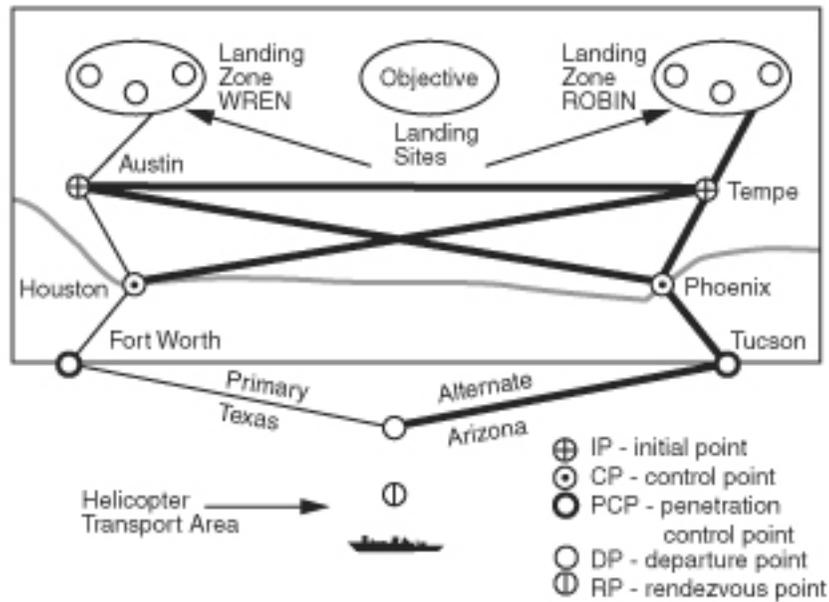


Figure 4-1. Helicopter Landing Diagram.

the PCP, it is considered “Feet Dry” and over dry land.

Control Point

Control point (CP) is a position marked by a buoy, ship or craft, electronic device or conspicuous terrain feature. It is used as an aid to navigation and to control helicopters en route to their designated LZ. Usually CPs are designated by the names of cities within the state used for the approach and retirement routes.

Initial Point

The initial point (IP) is an air control point in the vicinity of a LZ from which individual flights of helicopters are directed to the prescribed landing sites.

Break-up Point

The break-up point is an air control point at which helicopters returning from a LZ break formation and are released to return to individual ships or dispatched for other employment. It may be the same point, geographically, as the departure point.

Helicopter Employment and Assault Landing Table

This table is a detailed plan for the movement of helicopterborne troops, equipment, and supplies. It provides the landing timetable for the helicopter movement and indicates the assignment of specific troop units to specific numbered flights and their HLZ/landing sites. It is the basis for the helicopter unit’s flight schedules and the control of helicopter movement by the appropriate air control agency. The commander of the helicopterborne unit and the associated helicopter unit commander prepare the HEALT.

Each successive echelon of command makes necessary changes and consolidates the appropriate tables. Once complete, the final approving authority prepares/publishes the final approved consolidated tables.

Upon publication, lower echelons publish extracts pertaining to their units. Close coordination between the helicopter direction center (HDC) and the embarked LF elements is required to ensure execution of the desired plan.

Navy Ship-to-Shore Control Organizations

Navy STS control organizations are responsible to CATF for the movement of ships, landing craft, amphibious vehicles, and aircraft from the transport and landing ship areas to landing beaches. These organizations keep CATF, CLF, and other designated commanders informed of the progress of the movement from ship to shore, the landing of various waves, and the visible progress of operations on shore. The exact organization is based on the number and arrangement of landing beaches used for the assault.

Central Control Officer

The central control officer is the CATF's representative for overall coordination of the surface assaults. A central control officer is assigned when STS movement to two or more colored beaches is planned. The central control officer's duties include assigning the PCO, secondary control officers, and controlling transport units in the transport area.

Assistant Central Control Officer

The assistant central control officer coordinates the movement of landing craft, vehicles, and ships in the assigned areas of responsibility and is only used for large-scale operations.

Primary Control Officer

The PCO directly controls the movement of all waterborne craft employed in transporting the LF, beach party personnel, supplies, and equipment to and from a colored beach. The PCO is embarked on the PCS, which provides the control team to affect the tracking/controlling effort. General duties of the PCO are:

- Control all boats assigned to PCS.
- Brief boat crews/officers on landing plan.
- Maintain location/status of all boats.
- Monitor surf conditions.

- Maintain status of embark/debark.
- Ensure maximum use of landing craft.
- Direct returning landing craft to ships.
- Monitor boat fuel operations/status.
- Publish the PCS Intentions Message.
- Designate PCS/boat communications.
- Brief naval and salvage operations.
- Direct waves to their assigned beach.
- Monitor long-/short-term weather.
- Monitor/control all surface traffic.
- Monitor repair of damaged boats.
- Maintain an accurate plot of ships.
- Make boating termination recommendations.

A PCO is normally designated in the following situations involving the waterborne movement of the LF:

- Landing a regimental landing team or a smaller troop organization over a colored beach.
- Back-loading of an LF across the beach when amphibious assault maneuvers have been terminated.
- Loading the LF prior to sailing for the AOA.
- Offloading all or part of the LF at or near the AOA (not using timed waves).
- Onloading or offloading all or part of the LF for training purposes.

Secondary Control Officer

The secondary control officer performs the same functions as the PCO for preparing to assume duties of the PCO in event of emergency. The secondary control officer is embarked on the secondary control ship and monitors all radio circuits and the movement of all waves being controlled by the PCO.

Boat Group Commander

Embarked in a landing craft, personnel (large) displaying the zero flag over beach color flag, the boat group commander is responsible for the discipline and organization of the boat group. The boat group commander ensures that the boat

waves maintain proper position in the rendezvous area, and when dispatched from the LOD—

- Leads the first wave to the line of breakers.
- Turns to the beach flank adjacent to the boat return lane to assist succeeding waves in their approach.
- Assumes duties of traffic control officer for the beach, reporting as such to the beachmaster.
- Directs traffic in the boat return lane after boats retract.

Assistant Boat Group Commander

The assistant boat group commander is embarked in a craft displaying the whiskey flag over the colored beach flag. Responsibilities include—

- Preparing to assume duties of the boat group commander.
- Keeping assembly areas organized and checking on stragglers.
- Expediting boats leaving designated assembly areas to go alongside assigned shipping for loading.
- Assisting in the dispatching of waves (subsequent to first wave) to the rendezvous area and from there to the LOD, following the last scheduled wave to the surf zone.
- Assuming the duties of senior salvage officer afloat after the landing of all scheduled waves; reporting to the beachmaster.

Boat Wave Commander

The boat wave commander is embarked on a landing craft and is responsible for proper wave organization and for discipline of boats in the wave to include maintaining specified interval and distance. The boat wave commander—

- Ensures readiness for movement at proper time.
- Adjusts speed to maintain proper interval from other waves and to cross the LOD and arrive at the proper beach at the designated time.

- Controls retraction of a wave from the beach while ensuring the orderly return to PCS or secondary control ship.

Wave Guide Officer

The wave guide officer is assigned to each wave of amphibious vehicles. Duties include—

- Forming up amphibious vehicles and guiding them to position to seaward of LOD, acting as a safety boat.
- Reporting to the PCS and providing information relative to the readiness of the wave.
- Taking station ahead of the wave or on the left flank and leading the wave up to and across the LOD on signal from the PCS.
- Ensuring that the wave is maintaining proper position in the boat lane and reaches the assigned beach on time, assisted by direction from PCS.

Note: During an actual assault, the AAV commander will assume these duties.

LCAC Control Officer

The LCAC control officer directly controls the movement of all LCAC assault craft employed in transporting LF personnel, supplies, and equipment to and from a colored beach. The LCAC control officer is embarked on the LCAC control ship, which provides the control team required to effect LCAC tracking/controlling efforts. The LCAC control officer reports to the PCO.

LCAC Control

There are three means the LCAC can be controlled: independent, advisory, and positive. If the LCAC controls itself, this is considered independent control. Advisory control is maintained when the LCAC is vectored from the launch area to the first control point. Finally, positive control

can be used whereby continuous position updates are provided. Each of these control measures can be accomplished by the LCAC commander, LCAC control officer or by the PCO. Some common LCAC control reference features include—

- **Craft Launch Area.** The craft launch area may be located a few thousand yards to 100 miles offshore. It is of sufficient size to permit underway launch.
- **Craft Departure Point.** The craft DP is a geographical position that marks the seaward end of transit lane.
- **Craft Transit Lane.** Determined by CATF, the transit lane width is dependent upon LCAC formation, topographic considerations, and the mine threat. In some instances you may require lanes for each sortie, approach, and return.
- **Craft Control Point.** The craft CP is a geographic position determined by PCO to control STS movement.
- **Craft Penetration Point.** The craft penetration point is a geographic position where the LCAC crosses the high water mark.
- **Craft Landing Zone.** Determined by CATF, the CLZ is an area where LF material will be offloaded. A specified area within a CLZ, which provides an 80 to 100 yard diameter area for LCAC, is called an LCAC landing site.

Air Control Agencies and Airborne Ship-to-Shore Movement

The tactical air control system is divided into two major sections with a number of subordinate agencies. For the Navy, there is the tactical air control center (TACC), and working closely with them is the supporting arms coordination center.

Control of the helicopterborne movement is exercised by the CATF. Aircraft units employed in the movement are subordinate elements of the LF. These units execute the STS movement in accordance with the landing plan and controls that are established on the basis of LF requirements.

Plans include provisions for reversion of control of aircraft operations to the CLF when the situation ashore permits. CATF employs tactical air control group (TACGRU) and the aircraft transport group/unit commanders to plan and conduct the helicopterborne movement. CLF employs the tactical-logistical group (TACLOG) to assist Navy control officers.

Tactical Air Control Center Afloat

The TACC afloat is organized and equipped to exercise control and/or coordination of all aircraft, including helicopters, in the AOA. During the helicopterborne movement, the TACC exercises control over all aircraft; coordinates aircraft movements with supporting arms and other air operations; and maintains the current status of aircraft and landing platforms and the progress of the helicopterborne assault(s).

The TACGRU/tactical air control squadron (TACRON) operates TACC afloat or tactical air direction center (TADC) to control all aircraft in the AOA and provides aircraft control and warning facilities afloat for offensive and defensive missions within the AOA. A USMC or Army officer may be assigned. If Air Force aircraft are involved, an Air Force liaison officer will be assigned. The officer in charge (OIC) of the TACRON detachment usually stands tactical air controller billet and tactical air officer duties.

The tactical air controller is the OIC of all operations in the TACC afloat. Aircraft movements must be closely coordinated with the other users of airspace; e.g., fixed-wing aircraft and supporting fires. The tactical air officer, located in the TACC, is responsible for this coordination. The LF TACLOG provides liaison to the tactical air officer.

Tactical Air Direction Center

The TADC is a subordinate air operations installation of the TACC afloat or ashore, from which aircraft and air warning service functions of the tactical air operations in an area of responsibility are directed.

The Aircraft Transport Group Commander

This individual is responsible for matters related to flight control of the aircraft. This control is exercised through the HDC and the helicopter logistics support center (HLSC). The helicopter-borne assault force TACLOG, collocated with the HDC and HLSC, provides the necessary liaison.

Helicopter Coordination Section

As an integral part of the TACC afloat, the helicopter coordination section is the specific section that coordinates all helicopter operations decentralized under the control of subordinate helicopter control agencies. The helicopter coordination section is organized into two units: helicopter coordination unit (formally helicopter control unit), concerned with the actual employment and coordination of helicopters; and a helicopter advisory unit, concerned with maintaining current data on the status, availability, locations, and progress of the helicopterborne assault(s). Additionally, the helicopter coordination section is normally augmented with personnel from the ACE of the LF.

Helicopter Direction Center

The actual control and direction of helicopterborne STS movement is decentralized to the HDC(s), which is/are subordinate to the TACC afloat. The HDC(s) is/are embarked aboard the helicopter transport capable ships—normally an LHD or LHA. Major functions of the HDC(s), under the overall supervision of the TACC afloat, are—

- Controlling the movement of all helicopters operating within its assigned control areas and in accordance with the concept of operations.
- Controlling escort aircraft when directed by the TACC.
- Maintaining and reporting to the TACC the status and location of assigned helicopters.
- Advising the TACC on all matters pertaining to the movement of the helicopters within its control area that may require coordination with supporting arms.

- Coordinating all changes to the HEALT with the HLSC.
- Controlling the movement of casualty evacuation (CASEVAC) helicopters based on the advice of the ATF medical regulating control center.

The HDC(s) is/are collocated and closely integrated with the TACLOG, HLSC, and medical regulating control center. During operations, the helicopter assault force TACLOG monitors requests from assault units or their CSS elements ashore. Requests for delivery by helicopter are forwarded through the HLSC, which coordinates the debarkation of serials in accordance with the landing plan. The requests are then forwarded to the HDC(s) for execution. The medical regulating control center recommends to HDC the particular medical facility to which CASEVAC helicopters should be directed.

When the direct air support center (DASC) is established ashore, it assumes responsibility for HDC operations as directed by the TACC. Within the DASC is the helicopter director, who is responsible for the coordination and control of helicopters operating under control of the DASC. When and to the extent that air control ashore is exercised by Air Force elements, agencies are established in accordance with Army-Air Force procedures for air-ground operations; however, air control agencies ashore must be compatible and capable of functioning with other air control agencies of the ATF.

Helicopter Logistic Support Center

The HLSC is located aboard the helicopter flagship close to the HCS detachment. It coordinates the debarkation of air serials during large-scale operations in accordance with the landing plan, under the control of the helicopter logistics coordinator, a Navy officer, comparable to the PCO of a waterborne movement.

The troop commander ashore or the LF support party (or helicopter support team) will request on-call, nonscheduled serials and emergency

resupply based on priorities. The HLSC processes all air requests through the helicopter coordination section and, once approval is given, notifies the debarkation control officer on the applicable ship to prepare for helicopter operations and the nature of the mission.

The coordination that the HLSC performs is dependent on the communications (logistics) nets available. The helicopter assault force TACLOG, located aboard the central control ship, monitors such requests and assists as required. TACLOG informs the requesting ground commander or the supporting CSS element of mission approval, the type and number of aircraft, the expected time of arrival at his position, and the helicopter route if applicable. This information is required by the ground unit's fire support coordination center for fire support coordination. Once helicopter control is passed ashore, the DASC will provide this information.

Control Ashore (Direct Air Support Center)

The DASC is normally the first LF air control agency established ashore. It is designed for control and direction of offensive air support including close air support, assault support, and other tactical direct air support operations. The DASC operates under the direction of the LF ACE commander/tactical air commander.

The DASC controls and directs tactical direct air support, and controls helicopters when control has been passed ashore.

A medical regulating control center is collocated to advise on matters dealing with casualty movement.

Assault Support Coordinator (Airborne)

The assault support coordinator (airborne) (ASC[A]) is an experienced naval aviator operating from an aircraft to direct airborne coordination and control of helicopter assaults. The ASC(A) is responsible for the airborne control of all helicopters in his assigned area and coordinates with the tactical air coordinator (airborne)

or forward air controller (airborne), as appropriate, for support of close air support aircraft, as determined by the tactical situation.

When an ASC(A) has not been designated, the helicopter transport flight leader may, within the limits of his authority, discharge the duties of the ASC(A) requisite to mission accomplishment.

If employed in conjunction with the TAC(A), the relationship between the two will be established by the TAC or the TAC's designated representative.

The ASC(A) may function as an extension of the DASC, ASC (Surface) or HDC in situations in which those agencies delegate specific authority the ASC(A) for specific missions.

The ASC(A) and helicopterborne unit commander should normally be assigned to a single aircraft where feasible to facilitate timely and coordinated decisions affecting the helicopterborne assault.

Tactical Air Coordinator (Airborne)

The tactical air coordinator (airborne) (TAC[A]) is an officer who coordinates from an aircraft the action of combat aircraft engaged in close support of ground or sea forces. The TAC(A), as an on-site airborne extension of the DASC, TACC or TADC, is normally the senior air coordinating authority over all aircraft operating within the assigned area of responsibility.

The specific authority exercised by a TAC(A) will be as specified or delegated by the DASC, TACC or TADC, as appropriate.

During helicopterborne assault operations and other operations where an ASC(A) is employed, the relationship between the TAC(A) and the ASC(A) will be established during the planning phase by the tactical air commander or the designated representative.

The TAC(A)'s principal responsibilities are to deconflict aircraft and coordinate employment of supporting aircraft with other supporting arms. In

fulfilling this responsibility, the TAC(A) coordinates as necessary with the ASC(A), ground commanders' tactical air control parties, fire support coordination centers, subordinate forward air controller (airborne), and the fire direction centers of artillery and naval gunfire.

The TAC(A) may or may not be assigned depending on mission requirements and aircraft availability. When assigned, the TAC(A) is subordinate to the DASC or the TACC or TADC.

Helicopter Employment

Helicopter assault movement planning is a cooperative AF effort by CATF and CLF chains of command employing concurrent, parallel, and detailed planning. The unique qualities and capabilities associated with a vertical assault warrant a review of helicopter employment considerations; especially given the ability to employ them from over the horizon to achieve tactical surprise. The following employment considerations must be weighed:

- The quantity and types of helicopters available.
- Total number of helicopter capable amphibious ships and other ships that can operate and maintain helicopters.
- Location, nature, number, and size of HLZs, and their approach and retirement lanes.
- Enemy capabilities and dispositions, especially location, type, and density of anti-aircraft weapons. A necessary ingredient for a successful helicopterborne operation is control of the airspace in which friendly forces operate (air superiority). Transport helicopters, especially in large formations, are vulnerable to surprise air attack by air-to-air missiles and anti-aircraft/air defense artillery.
- Oceanographic/weather influences such as sea state during launch/recovery operations and the expected weather conditions to be encountered en route, and at the HLZ. This includes ceiling, visibility, icing, winds, and turbulence.
- Requirements for supporting arms, linkup, and CSS.
- Availability of alternate plans for landing serials scheduled for helicopterborne waves aborted during the landing.
- Helicopters require greater quantities of fuel than surface vehicles performing similar tasks. A greater maintenance effort is required for helicopters than for other types of transportation.
- In certain operations, secrecy may be compromised by engine and rotor noise or dust in the LZ.
- Helicopter operations are severely limited when icing conditions prevail. Helicopter lift capability is affected by changes in atmospheric conditions; i.e., altitude, wind, and temperature.
- Weight and balance of internal loads must be carefully computed to ensure safe and efficient flight. Questions regarding the maximum weight authorized for each aircraft type should be directed to either the ship's air operations officer or the aircraft squadron operations officer. Table 4-1 on page 4-14 provides helicopter load planning data.
- Various weather phenomena affect helicopter operations in many different ways. Low ceilings can reduce the effectiveness or preclude the use of fixed-wing aircraft providing escort, LZ preparation, and close air support of the helicopterborne force. Helicopters are vulnerable to nuclear blast effects, anti-aircraft fire, small arms fire, and enemy aircraft.
- Large-scale employment of helicopters is dependent upon good visibility, adequate landing areas, and protective measures.
- All helicopter operations require precise coordination for deconfliction with other air operations and supporting arms.

Table 4-1. Helicopter Load Panning Data.

AIRCRAFT TYPE	COMBAT LOADED TROOPS	ADMIN TROOPS (PMC)	INTERNAL CARGO WEIGHT (lbs)	EXTERNAL CARGO WEIGHT (lbs)
CH-53E	24	37	15,000	36,000
CH-53D	24	37	8,000	24,000
UH-1N	06	08	1,400	1,400
CH-46	12	12	3,000	3,000
CH-47	31	31	50,000	25,000
SH-60	11	20	22,000	8,000
MV-22	24	24	20,000	15,000

Capabilities are for planning purposes only. Maximum internal or external load capabilities may be lower depending on weather conditions, aircraft fuel load, and limitations of specific aircraft type, model, and series.

Planning for Wave, Beach, and Surf Conditions

Selecting Beaches

Within limits set by strategic and tactical considerations, landing areas should be selected with reference to surf and beach conditions under exposure to different wave conditions. After the hydrography of each area has been obtained, wave refraction diagrams should be drawn to show the variations in surf conditions along the beach for wave periods and deep-water directions over the entire possible range. Alternative landing plans for each landing area will be desirable if the analysis shows markedly different surf conditions under exposure to waves of different possible directions and periods.

Selecting Ships and Vehicles

Selecting ships and landing craft with relation to anticipated surf conditions should be completed during the early planning stage of an operation. It is possible to plan for surf at this stage only on a statistical basis, but the probability of light or heavy surf action at the time and place of the

landing should also be considered. On shores noted for severe surf, there are some days of relative calm. On shores where the surf is normally light, there are usually some days of heavy surf.

Key information that should be obtained during the planning phase of a surfaceborne operation includes:

- Prevailing winds and surf.
- Refraction diagram and currents.
- Prevailing sea and swell tides.
- Beach slope and materials.
- Beach irregularities.

While the above information satisfies planning phase requirements, it does not meet the data requirements for D-Day. The following data is essential for D-Day operations. This information may be provided to planners by pre-assault forces using standardized reporting procedures.

- Surf and swell conditions.
- Depth of water and beach slope.
- Beach features (bars, troughs).
- Width of the surf zone.
- Significant breaker height.

- Angle of breakers to the beach.
- Wave length outside breaker line.
- Tides.
- Currents.
- State of the sea.
- Depth of breaking.
- Longshore currents.
- Period of breakers.

Surface Observation Reporting

Surf conditions are reported by various organizations. Usually SEALs, beachmasters or force reconnaissance personnel provide this information, depending upon the specific operation, since they are all trained to perform this task.

The observing force is required to observe 100 breakers (50 in a combat or hostile environment). Once this has been accomplished, the reporting unit uses the following format for a numbered beach on a given date and at local time.

INDEX	DESCRIPTION
ALFA	Significant breaker height: The average height of the one-third highest breaker on that beach.
BRAVO	Maximum breaker height: The highest breaker observed on that beach.
CHARLIE	Period of breaker: The time interval between breakers.
DELTA	Which is the type of breakers and percentage of each.
ECHO	Breaker angle: The acute angle, in degrees, that a breaker makes with the beach and its direction relative to the beach (right/left flank).
FOXTROT	Littoral current: The long shore currents direction and speed.
GOLF	The number of lines of breakers in and the width of the surf zone measured in feet.
HOTEL	Remarks: Information important to landing operations such as wind direction and velocity, visibility, debris in the surf zone, secondary wave system, dangerous conditions, etc.

The information provided by surf observation reports is processed accordingly (using modification tables) by the PCO. The final product is an abstract number called “MODIFIED SURF INDEX” that gives planners an idea of the feasibility of the landing for each different craft available.

Modified Surf Index

The modified surf index (MSI) is a single dimensionless number that provides a relative measure of the conditions likely to be encountered in the surf zone. For the reported or forecast conditions, the MSI provides a guide for judging the feasibility of landing operations for each type of landing craft. However, the MSI is not used for LCAC, rigid raiding craft, and combat rubber raiding craft.

Modified Surf Index Calculation

When applied to a known or forecasted surf condition, the modified surf index calculation provides the commander with an objective method of arriving at a safe and reasonable decision with respect to committing landing craft and amphibious vehicles. The modified surf limit (MSL) is the MAXIMUM surf that should be attempted for routine operations. If the MSI exceeds the MSL for the craft or vehicle, the landing is not feasible without increasing the casualty rate. If the MSI is less than the MSL of the craft, the landing is feasible. The modification tables required to complete the calculations are located in chapter 11 of the COMNAVSURFPAC/COMNAVSURFLANTINST 3840.1, *COMNAVSURFPAC/COMNAVSURFLANTINST Joint Surf Manual*.

LCAC Surf Information

MSI is not applicable to the LCAC. Limiting conditions for operating the LCAC in the surf zone is based on load size and significant breaker height only. Table 4-2 on page 4-16 provides the LCAC limits to be used for planning purposes. Combat cargo personnel requiring

detailed mission planning parameters should consult the LCAC SEAOPS Manual or contact the LCAC assault craft unit detachment OIC.

Table 4-2. LCAC Planning Limits.

LOAD	SIGNIFICANT BREAKER HEIGHT
75 tons overload	0-4 feet
60 tons normal payload	4-8 feet
45 tons reduced payload	8-12 feet

Surf Limits for Raiding Craft

The MSI is not used for judging the feasibility of conducting combat rubber raiding craft/rigid raiding craft operations. Rigid raiding craft operations should only be conducted in relatively benign surf conditions, where the significant wave height is 1 foot or less.

Beach Nomenclature and Characteristics

Terminology

The **offshore area** is that area from the 5-fathom curve seaward.

The **inshore area** is that area from the 5-fathom curve to the mean low water mark.

The **foreshore area** is that area from the mean low water mark up to the beginning of the ordinary or summer berm.

The **backshore** is that area that comprises both ordinary-summer and storm-winter berms.

The **coastal terrain** is that area from the storm-winter berm inland.

The **berm** is a nearly horizontal portion of the beach or backshore having an abrupt fall and formed by deposition of material by wave action, marks the limit of ordinary tides.

The **scarp** is an almost perpendicular slope caused by wave action and erosion along the shore line.

Characteristics

The trafficability of the **submerged section** is critical especially during low tide conditions.

The trafficability of the **moist section of the tide zone** is kept by the normal wave action on that beach at high tide.

The **dry section** includes berm and backshore, soft, hard, etc.

The areas in **back of the beach** (dunes, swamps, hills, mangroves, rocks, etc.).

Beach and Surf Hydrographics

The planning and execution of surfaceborne operations require combat cargo personnel to understand the effects of surf and hydrographic conditions. Studies of both features must be conducted because the surf on a given beach depends not only upon beach exposure, but also upon the underwater topography. Furthermore, the profile of sandy and gravel beaches is constantly altered by wave action. These features can have a profound affect on operations. The following paragraphs provide the information necessary to understand the beach and surf considerations used in planning and executing a surfaceborne operation.

Waves, Seas, and Swells

Waves are formed by wind, earthquakes, tides, the contour of the sea bottom, and the curve of the shoreline.

Terminology

The **crest** is the peak or upper limit of an individual wave, while the trough is the horizontal almost flat area between crests.

The **wave height** is the vertical distance from the crest to the preceding trough.

The **wave length** is the horizontal distance from crest to crest.

The **wave period** is the time it takes a wave-length to pass a given point.

Waves and the Shore

Shallow Water

Shallow water modifies and changes a wave, bending the wave front to approximate the shape of underwater contours. This is commonly known as refraction.

The water depth controls the velocity of the wave. Shallow water slows a wave resulting in waves striking nearly parallel to a shore.

The energy of a wave is concentrated in headlands where waves converge. Energy is spread out in bays where the waves are elongated.

Breakers

When the wave moves into water shallower than half the wavelength, the wave height will increase while the wavelength decreases causing breakers. At a water depth of 1.3 times the wave height, the water supply is reduced and the wave breaks. The three types of breakers are spilling breakers, plunging breakers, and surging breakers.

Spilling breakers normally occur on flat, mild and gentle beach gradients or slopes and to a lesser extent on moderate gradients. The crest slides down the face of the wave forming foam, giving a very gradual release of energy over a wide area. This type of breaker is preferred for conducting a surfaceborne operation.

Plunging breakers occur on steep gradients and to a lesser extent on moderate gradients. The crest plunges over into the preceding trough with a sudden release of energy in a narrow area. This condition is less preferred for conducting a surfaceborne operation.

Surging breakers occur on steep gradients. The backwash is very strong because of the steep slope. The wave builds like a plunging breaker but the sudden backwash stops the plunging and the breaker explodes onto the beach.

Effects of Breakers on Landing Craft

Breaker Height

High waves can swamp a craft by either plow in of the bow or when the wave breaks on the stern when landing or retracting from the beach.

Breaker Angle

Off-angle breakers can make it difficult for craft to remain on course or may result in breaching of the craft once it has landed.

Breaker Period

The interval at which the craft encounters breaking waves. Subjected to continuous impact resulting in loosing control of the craft, in drifting from the boat lane or correct beach, broaching.

Beach Gradient

The average bottom slope from the offshore area to the inshore area is called the beach gradient. The numbers refer to the rise-to-run ratio of the beach. For example, a steep gradient has a 1-foot rise in level every 15 feet of beach run. A gentle gradient is preferred for surfaceborne operations. Landing craft as well as LSTs have a keel slope of 1:45. This slope falls right in the middle of the gentle gradient. The five types of beach gradients follow:

SLOPE	RATIO
1 Steep	More than 1:15
2 Moderate	1:15 to 1:30
3 Gentle	1:30 to 1:60
4 Mild	1:60 to 1:120
5 Flat	Less than 1:120

Seas

Seas are generated by the wind, travel in the same approximate direction as the wind, and seas are generated within an area called the fetch. Within the fetch, the wind generating the seas has a constant direction and speed. The longer the wind duration and the greater the wind velocity, the greater the wave height.

Swell Action

Swells are waves that leave the fetch. They do not need local winds to sustain them. The crests of swells become lower and more rounded. Swells move in trains or groups of similar period and height. Seas and swells exist together. They can reinforce (crest meets crest) each other or cancel (crest meets trough) each other.

Tides

Combat cargo personnel must be familiar with the three types of tides and other tide related definitions. It is important to note that the majority of the Navy's charts are based on mean low water.

Semi-diurnal (semi-daily) tides are found on the East Coast of the United States. They consist of 2 low tides and 2 high tides in a 24-hour period (high-low-high-low).

Diurnal (daily) tides are found in the West Pacific and consist of 1 low tide and 1 high tide in a 24-hour period.

Mixed tides, are low and high tides. They are not divided equally in a 24-hour period by their intensity, however, they have a high tide inequality during a 24-hour period with consistent low tide levels. Mixed tides are found on the West Coast of the United States and Mid Pacific areas.

Definitions

The **high water** is the high level of a single tide.

The **low water** is the low level of a single tide.

The **mean high water** is the average of high tides.

The **mean low water** is the average of low tides.

The **range** is the vertical distance between high and low tide levels.

The **period** is the time for one complete tide cycle.

Sandbars

Sandbars are obstacles that parallel the majority of sand beaches. In some places they occur only during the season of largest waves, but elsewhere they persist throughout the year. Longitudinally the bars may be continuous for miles, but are likely to be discontinuous, being developed off some portions of a beach and not off others. The breaks in the bars can be detected from the air from the breaker pattern.

In some very sandy areas, a series of bars extends for miles out to sea and the outer ones attain depths far too great to interfere with surface-borne operations. However, the typical depth of the longshore bar ranges from about 3 to 15 feet below mean low water.

These offshore bars, particularly the shallower ones, are a serious menace to landings. Landing craft are often "hung" on the crest of the bars and a considerable time interval may elapse before they are able to cross.

Reefs, Shoals, and Currents

These environmental conditions can also have a dramatic affect on a waterborne landing. The following subparagraphs define each of these potential obstacles and clearly highlight their importance to operations planners.

Fringing Reefs

Fringing reefs are coral reefs attached to the land. The width may vary from a few feet to more than a mile. An inshore channel may be present on fringing reefs.

Barrier Reefs

Barrier reefs lie offshore and are separated from the land by a body of water called the lagoon. If the ship or landing craft operating areas can be established inside the reef, more stable sea conditions and anchorages will be assured.

Shoals

Uplifting seabed earthquakes form rock reefs. This may expose a rocky ledge or ridge offshore.

Offshore Currents

Offshore currents are found outside the surf zone. These currents are related to the distribution of density in the ocean and the effect of the winds. Examples are the Gulf Stream off the American East Coast and the Kuroshio off the coast of Japan. Currents of this type are constant for long periods, although they may vary in velocity and direction at different seasons of the year.

Longshore Currents

Longshore currents are found within the surf zone. Longshore or littoral currents flow parallel to the shoreline inside the breakers and are most commonly found along straight beaches. They are caused by waves breaking at an angle with the beach. Their velocity increases with increasing breaker height, with increasing angle of the breaker with the beach, and with steeper beach slopes. (Note: A breaker arriving parallel to the beach has an angle of 0 degrees to the beach.) The longshore currents are predictable but the accuracy of the forecast will depend upon the accuracy of the wave forecast on which it is based.

Rip Currents

Rip currents are caused by the waves piling water against the coast. This water flows along shore until it is deflected seaward by bottom irregularities or until it meets another current and flows out through the breakers. Once feeder and rip currents have formed, they cut troughs in the sand

and remain fairly constant in position until the wave conditions change.

Land Fast Ice

Land fast ice creates several problems such as—

- The ability of landing craft to properly beach, lower their ramps, discharge their cargo while holding their position.
- The inability of LF troops to cross the ice quickly and safely.
- Ice near the shore is likely to collapse under the weight of vehicles and support equipment.

Landing Craft Casualties

A **casualty** is any mishap by which a craft is put out of operation, either temporarily or permanently.

Swamping is caused by surf conditions spilling a large amount of water into a landing craft.

Hanging is when a landing craft is grounded on a sandbar, reef or shoal.

Broaching is when a beached landing craft is forced parallel to the beach (and further grounded) by surf action. This is the most dangerous of all landing craft casualties.

Plow-in is when the forward skirt of the LCAC collapses inward causing excessive yawing.

Salvage Operations

The mission of the salvage organization is to keep all boat lanes and beachheads clear of disabled assault craft so that movement to the beach is maintained. This mission is performed by the following organizations.

The boat group commander is responsible for all salvage operations from the beach to the LOD during the initial assault. After the initial assault,

the boat group commander becomes a traffic control officer and is relieved of all salvage duties by the beachmaster unit. Once the beachmaster unit is established ashore, it takes charge of all salvage operations from the water line to the 3-fathom mark and assumes the duties of the senior salvage officer.

The assistant boat group commander takes charge of all salvage operations from the LOD to the rendezvous area during the initial assault. After the departure of the last scheduled wave from the rendezvous area, the assistant boat

group commander becomes the senior salvage officer afloat and reports to the beachmaster unit.

Salvage boat assets are defined as being either heavy or light. The heavy salvage boat assets consist of landing craft, mechanized-8 (LCM-8); lighter, amphibious resupply, cargo (LARC); or the assault amphibious vehicle, recovery (AAVR). Heavy salvage boat assets follow the scheduled waves to the beach and remain in the vicinity of the beach. The light salvage boat assets consist of the landing craft personnel (large) (LCPL).

CHAPTER 5

US CUSTOMS SERVICE REQUIREMENTS AND AGRICULTURAL WASHDOWNS

US Customs Service

When a US Navy ship departs US territorial waters, Department of Defense (DOD) requires that each individual embarked on that vessel complete a DD Form 1854, *US Customs Accompanied Baggage Declaration* (in duplicate). A thorough inspection of every shipboard space must be performed to verify that no contraband or undeclared items are on the ship. A review of Judge Advocate General Instruction (JAGINST) 5800.7C, *Manual of the Judge Advocate General*, chapter 11, and DOD Publication 5030.49R, *Customs Inspections*, should be made before developing and promulgating the ship's or ARG's US Customs guidance.

Each ship should have a minimum of two personnel who are school-trained military customs

inspectors. Normally, the ship's master-at-arms personnel perform this function. Embarked landing force personnel are responsible for providing their own trained/qualified personnel.

The ship is required to maintain enough blank copies of the DD Form 1854 to provide two copies for each member of the ship's company and the embarked landing force. Advance coordination with the ship's master-at-arms office should be made to ensure that ample quantities are being maintained.

A thorough ship-wide inspection must also be accomplished. Inspectors should be looking for those items that are restricted or prohibited. Table 5-1 presents restricted, prohibited, or controlled items.

Preparations for conducting or effecting US Customs declarations and inspections should be based

Table 5-1. Restricted, Prohibited and Controlled Items.

Restricted	Alcohol	No more than 4 liters, three of US Manufacture, one of foreign can be brought into the United States duty free. Alcohol in excess of these amounts is authorized, but subject to taxation.
	Tobacco	No more than 100 cigars and 10 cartons of cigarettes.
Prohibited	Drugs, narcotics or controlled substances that are not prescribed by a physician.	
	All articles originating in Cambodia, Cuba, Vietnam, North Korea or Rhodesia.	
	Switchblade knives.	
	Plants, plant products, fruits or vegetables.	
	Pornographic or obscene material.	
	Lottery tickets.	
Printed matter advocating insurrection or treason toward the United States.		
Controlled	Firearms	These items are allowed, but only with the written approval from the ARG commander and ship's commanding officer.
	Ammunition	

on overarching procedures/guidance provided by the ARG commander. Once DD Form 1854 is promulgated, each ship is responsible for publishing a ship's notice or bulletin that directs the department heads and embarked landing force commanders with very specific actions. It is imperative that ships engage the COT and the staff in the development of the notice/bulletin and in the execution of the actual inspection.

Once the individual has completed all customs forms, they must be reviewed, stamped, and segregated by the military customs inspectors. The final customs forms are normally hand carried by a designated ATF/LF customs representative to the US Customs representatives in the CONUS port of entry. This requires the designated customs representatives to return to CONUS from the ship's last overseas port. The delivery of these forms should be accomplished prior to the ship's return to CONUS to expedite US Customs clearance. Customs personnel will normally identify the assessed fees in two categories; one for the Navy and one for the embarked landing force. The ship's SupO normally prepares a single US Treasury check for the sum of both of these categories and presents the check to the customs agent upon arrival at the first CONUS port of entry. The ship's SupO coordinates with the landing force SupO for reimbursement of landing force assessed fees.

US Customs agents will provide the ship a by-name roster that indicates each individual's assessed customs duty so that the ship and landing force can conduct their own independent collections efforts prior to the ship's arrival. The customs agent will also be seeking a formal vessel declaration letter from the ship, signed by the CO, which states the ship-wide inspection was completed and that no restricted or prohibited items are on board. Any delays in presenting the check or vessel declaration letter will delay the execution of the offload.

The role of the CCO in this process is as a facilitator. It is very important that both the ship and the COT understand the requirement to have at least two trained military customs inspectors aboard prior to the actual deployment. This issue must be repeatedly addressed during each of the pre-deployment planning meetings and conference wrap-up messages. Combat cargo must also ensure that all parties agree to the inspection policies and procedures. This is best accomplished through a joint meeting where a ship's notice or bulletin is developed and promulgated.

Agricultural Washdown Operations

Special precautions prevent introducing harmful public health or agricultural agents from entering the United States on military equipment. The combined service instruction SECNAVINST 6250.2/AR 40-12/AFR161-4, *Quarantine Regulations of the Armed Forces*, describes DOD support for the United States Public Health Service and the United States Department of Agriculture (USDA) to prevent such introductions. This reference prohibits backloading of vehicles and cargo in a foreign country unless they are free of animal, pest, and soil contamination.

Detailed attention and logistical forethought must be given to the issue of washdown supply procurement and receipt. This can be a "show-stopper" for both the landing force and the ship. Sufficient quantities or cleaning solvents, brooms, rags, brushes, wet-and-dry-vacuums, high pressure hoses, and other cleaning materials must be available. A joint approach for developing letters of instruction is highly recommended. Such plans should provide the purpose, sequence of events, and include a detailed assignment of responsibilities for all parties. Details must be presented in a forum where all ship's department heads, required division officers, and embarked

landing force unit commanders are required to attend. Another useful tool for disseminating information is plan of the day notes or the ship's closed circuit television system, if available.

Agricultural washdown operations also require documentation. The COT must provide the ship's CO with a detailed list of noncontaminated supplies and equipment. This list should be in the form of an official letter and identify by compartment number, the box number, vehicle serial number or other identifying number for the noncontaminated items. This letter forms the basis for the preparation of a joint "Certification of Noncontaminated Spaces/Cargo" letter to the medical entomologist. The medical entomologist will be conducting the agricultural inspection on behalf of the USDA. The ship must also identify ship specific spaces and equipment that are included in the noncontaminated spaces/cargo letter. Figure 5-1, on page 5-4, is a sample letter. A copy of this letter must be retained and presented to USDA officials at the CONUS port of entry as part of the clearance process.

Once the agricultural inspection is complete, the senior medical entomologist will present the ship with a letter indicating compliance with USDA inspection and entry requirements. This letter, accompanied by the noncontaminated spaces/cargo letter must be presented to the USDA officials who will embark the ship at its first CONUS entry point. Figure 5-2, on page 5-5, provides a sample compliance letter. It is important that all commanders understand that the USDA will not board a vessel that is anchored outside a port. Inspectors will only board the ship if it moors pierside. A copy of the letters must be made available to conduct the discharge of cargo, supplies, and equipment, even if the ship does not moor pierside. This requirement is driven by the need to validate compliance with agricultural washdown requirements. Coordination with USDA and medical entomologist personnel must occur prior to deployment and continue through the planning and execution processes. Typically the ship's CCO will oversee and coordinate shipboard washdown preparations and execution.

DEPARTMENT OF THE NAVY
 NAME OF ACTIVITY
 ADDRESS
 CITY, STATE, ZIP+4

4000
 Ser:
 Date

From: Commanding Officer, USS DEVIL DOG (LHX 1)
 Commanding Officer of Troops, USS DEVIL DOG (LHX 1)

To: Senior Medical Entomologist, 2d Medical Battalion, 2d Force
 Service Support Group, PSC 20129, Camp Lejeune, NC 28542 - 0129

Subj: CERTIFICATION OF NONCONTAMINATED SPACES/CARGO

Ref: (a) Insert appropriate reference

Encl: (1) Commanding Officer of Troops ltr 4620 COT dtd 1 June 99 (This letter should provide a detailed listing of all landing force supplies and equipment by stowage location/serial and box number that should be considered as noncontaminated.)

1. Per reference (a) and as supported by enclosure (1), the following list of noncontaminated spaces/cargo aboard USS DEVIL DOG (LHX 1) is submitted.

SPACE/CARGO	COMPARTMENT
Second Platform: Ammunition/Cargo	Holds Upper 4 and Upper 5
Inner Bottom: Ammunition/Cargo	Holds Lower 4 and Lower 5
Second Platform: Ammunition	Holds and 9 and 10
Small Arms Magazine: Ammunition	6-47-0-M
Fuze Magazine: Ammunition	6-47-4-M
Thermite Grenade Lockers	02 Level Starboard
Upper Vehicle Stowage: 28 QUADCONs, (3) 20-foot shelters, 35 pallets, and 74 miscellaneous boxes (forward of hinged ramp).	
Lower Vehicle Stowage: 165 miscellaneous size boxes and 150 pallets (portside aft).	
Hangar/Flight Deck: All aviation support equipment and material handling equipment located on the hangar and flight decks.	

2. The command point of contacts are Captain I. M. Washing, CCO, USS DEVIL DOG (LHX 1) and Captain I. B. Cleaning, Team Embarkation Officer, 22d Marine Expeditionary Unit.

R. U. SAILOR
 Commanding Officer
 USS DEVIL DOG (LHX 1)

I. B. INCHARGE
 Commanding Officer of Troops
 USS DEVIL DOG (LHX 1)

Copy to:

COMNAVSURFLANT/PAC
 COMMARFORLANT/PAC (G-4/SMO)
 LANTNAVFACENGCOM (10A)
 CG, _____ FSSG (G-3)
 COMPHIBRON
 _____ MEU
 COT, USS DEVIL DOG (LHX 1)

Figure 5-1. Noncontaminated Spaces/Cargo Certification - Sample Letter.

DEPARTMENT OF THE NAVY
 NAME OF ACTIVITY
 ADDRESS
 CITY, STATE, ZIP+4

6250
 PM
 Date

From: Senior Medical Entomologist, ____ Medical Battalion, ____ Force Service Support Group, PSC 20129, (insert remainder of command address)

To: Commanding Officer, USS DEVIL DOG (LHX 1)

Subj: AGRICULTURAL WASHDOWN OF USS DEVIL DOG (LHX 1)

Ref: (a) Insert appropriate reference

1. An agricultural washdown has been completed on ____ MEU per reference (a). Each piece of rolling stock, airframe, and all storage areas aboard USS DEVIL DOG (LHX 1) have been certified and found to meet US entrance requirements in accordance with published US Department of Agriculture bylaws.
2. The agricultural washdown was completed at (insert washdown location, e.g., NAVSTA Rota, Spain) on date. A three-member Preventative Medicine Team from Camp Lejeune, NC served as reviewing inspectors prior to each vehicle or aircraft certification.
3. The point of contact for questions regarding this washdown is LT Gritgetter or HMC Soapsuds at (910) 451-5707 or DSN 751-5707.

I. M. GRITGETTER
 LT, MSC, USNR

Copy to:

USDA, Morehead City, NC
 COMPHIBRON
 MEU
 COT, USS DEVIL DOG (LHX 1)

Figure 5-2. Agricultural Inspection Compliance - Sample Letter.

APPENDIX A

NAVSURFLANT AMPHIBIOUS FORCE CAPABILITIES

SHIP	LANDING FORCE *SURGE				SQUARE FEET	CUBIC FEET	LCAC	LCU	TOTALS (SQUARE FEET)		
	FLAG	OFF	SNCO	ENL					WD	HD	UV
WASP LHD-1	1	173 *19	64 *6	1,449 *161	24,012	144,948	3	2	WD 18,490 LV 9,038	HD 20,698	UV 14,974 FD 90,737
KEARSARGE LHD-3	1	173 *19	64 *6	1,443 *167	26,558	137,225	3	2	WD 14,270 LV 9,038	HD 20,698	UV 14,947 FD 82,392
BATAAN LHD-5	1	173 *18	64 *6	1,449	29,203	149,298	3	2	WD 16,142 LV 9,829	HD 19,547	UV 16,374 FD 91,386
SAIPAN LHA-2	1	172	63	1,672	36,163	142,215	1	4	WD 18,565 LV 9,829	HD 18,519	UV 17,636 FD 75,183
NASSAU LHA-4	1	172	59	1,672	58,024	208,431	1	4	WD 18,565 LV 6,309	HD 18,519	UV 17,636 FD 73,856
AUSTIN LPD-4	NA	68	21	638 *188	14,848	53,647	1	1	WD 7,398 LV 8,817	HD NA	UV 6,960 FD 13,754
SHREVEPORT LPD-12	1	79	26	540 *168	16,380	47,445	1	1	WD 8,036 LV 9,037	HD 3,543	UV 7,343 FD 13,809
NASHVILLE LPD-13	NA	79	26	549 *200	17,352	62,836	0	1	WD 8,036 LV 9,052	HD NA	UV 8,300 FD 15,000
TRENTON LPD-14	NA	71	21	609 *176	17,773	56,555	0	1	WD 8,528 LV 9,037	HD NA	UV 7,556 FD 13,754
PONCE LPD-15	NA	71	21	636 *192	15,824	48,960	1	1	WD 7,885 LV 8,732	HD 1,217	UV 7,452 FD 13,850
PORTLAND LSD-37	NA	26	8	242 *64	8,333	69,054	3	2	WD 21,000	HD NA	FD 4,680
WHIDBEY ISLAND LSD-41	NA	25 *7	12 *6	362 *87	21,619	6,743	4/5	3	WD 21,616 VEH 18,451	HD NA	FD 7,935
GUNSTON HALL LSD-44	NA	27 *7	18 *6	360 *88	18,451	6,665	4	3	WD 21,619 VEH 18,451	HD NA	FD 9,356
TORTUGA LSD-46	NA	28 *7	18 *7	362 *88	19,067	6,651	4	3	WD 21,619 VEH 19,067	HD NA	FD 8,444
ASHLAND LSD-48	NA	27 *7	14 *7	362 *88	19,349	6,727	4/5	3	WD 21,619 VEH 19,067	HD NA	FD 8,444
CARTER HALL LSD-50	NA	25 *7	18 *6	362 *88	26,917	80,816	2	1	WD 9,040 VSA 2,227	TT 1,184 VSA 12,336	BD 3,615 FD 7,925
OAKHILL LSD-51	NA	25 *7	18 *6	362 *88	16,003	66,535	2	1	WD 8,592 VSA 1,565	TT 1,184 VSA 8,975	BD 3,615 FD 7,808

Totals equal maximum stowage capability of all areas. See individual SLCP for specific capability restrictions and reductions.

BD - boat deck

FD - flight deck

HD - hangar deck

LV - lower vehicle deck

TT - truck tunnel

UV - upper vehicle deck

VEH - vehicle

VSA - vehicle stowage area (LSD CV)

WD - well deck

APPENDIX B

NAVSURFPAC AMPHIBIOUS FORCE CAPABILITIES

SHIP	LANDING FORCE *SURGE				SQUARE FEET	CUBIC FEET	LCAC	LCU	TOTALS (SQUARE FEET)		
	FLAG	OFF	SNCO	ENL					WD	HD	UV
ESSEX LHD-2	1	171 *19	64 *6	1,392 *157	25,212	144,948	3	2	WD 18,490 LV 9,038	HD 20,698	UV 16,174 FD 90,737
BOXER LHD-4	1	171 *19	64 *6	1,392 *157	25,212	144,948	3	2	WD 18,490 LV 9,038	HD 20,698	UV 16,174 FD 90,737
BON HOMME RICHARD LHD-6	1	171 *19	64 *6	1,392 *157	25,212	144,948	3	2	WD 18,490 LV 9,038	HD 20,698	UV 16,174 FD 90,737
TARAWA LHA-1	1	171	59	1,672	24,891	158,827	1	4	WD 16,856 LVF 5,003	HD 20,866 LVA 4,159	UV 17,941 FD 75,185
BELLEAU WOOD LHA-3	1	171	59	1,672	23,120	116,111	1	4	WD 16,856 LVF 3,640	HD 20,866 LVA 1,536	UV 17,941 FD 75,185
PELELIU LHA-5	1	171	59	1,672	24,891	158,827	1	4	WD 16,856 LVF 5,003	HD 20,866 LVA 4,159	UV 17,941 FD 75,185
OGDEN LPD-5	0	73	21	630 *202	14,083	51,174	1	1	WD 7,900 LV 6,955		UV 7,128 FD 15,088
DULUTH LPD-6	0	73	21	630 *202	14,083	51,188	1	1	WD 7,900 LV 6,955		UV 7,128 FD 15,088
CLEVELAND LPD-7	1	78	26	555 *178	14,102	51,188	1	1	WD 7,062 LV 7,373		UV 6,727 FD 14,793
DUBUQUE LPD-8	1	79	26	569 *186	13,858	56,553	1	1	WD 7,084 LV 7,947		UV 5,911 FD 14,861
DENVER LPD-9	1	78	26	584 *170	12,329	56,845	1	1	WD 8,012 LV-6,497		UV 5,832 FD 14,861
JUNEAU LPD-10	1	79	26	576 *178	13,876	48,783	1	1	WD 7,084 LV 7,327		UV 6,549 FD 13,252
ANCHORAGE LSD-36	0	25	8	301	17,712 (1)	2,753 (2)	3/4	2/3	WD 20,224 (1)	MD 6,880 SD 2,283	FD 5,664
MOUNT VERNON LSD-39	0	25	8	266 *58	16,572 (1)	2,036 (2)	3/4	2/3	WD 20,724 (1)	MD 5,740 SD 2,832	FD 5,664
GERMANTOWN LSD-42	0	27 *7	14 *6	362 *88	19,067 (3/5)	6,727	4	3	WD 21,619 (3)		VS 19,067 FD 17,800
FORT McHENRY LSD-43	0	27 *7	14 *6	362 *88	19,067 (3/5)	6,727	4	3	WD 21,619 (3)		VS 19,067 FD 17,800
COMSTOCK LSD-45	0	27 *7	14 *6	362 *88	19,067 (3/5)	6,727	4	3	WD 21,619 (3)		VS 19,067 FD 17,800
RUSHMORE LSD-47	0	27 *7	14 *6	362 *88	19,067 (3/5)	6,727	4	3	WD 21,619 (3)		VS 19,067 FD 17,800
HARPERS FERRY LSD-49	0				14,127 (1)	50,777 (4)	2	2	WD 9,040		VSA 14,127 FD 17,800
PEARL HARBOR LSD-52	NA	25 *7	18 *6	362 *88	16,003	66,535	2	1	WD 8,592 VSA 1,565	TT 1,184 VSA 8,975	BD 3,615 FD 7,808
FREDERICK LST-1184	NA	18	18	246 *48	16,609	4,361			TD 8,880 MD 7,729		VEH 16,609 FD 2,610

Totals equal maximum stowage capability of all stowage areas. See individual SLCP for specific capability restrictions and reductions.

NOTES:

- (1) Approximately 8,000 square feet available in WD under mezzanine deck (figure included in total).
- (2) With/without mezzanine deck installed.
- (3) Approximately 3,500 square feet available in WD forward of landing craft (figure included in total).
- (4) Weight restriction may preclude stowage of total cubic feet capability. Ship alterations may reduce total cubic feet capability but will increase total square feet capability.
- (5) 2-spot flight deck is 17,800 square feet. FWD spot (8,444 square feet) is included in the vehicle square feet cap.

BD - boat deck
FD - flight deck
HD - hangar deck
LV - lower vehicle

LVA - lower vehicle AFT
LVF - lower vehicle forward
MD - mezzanine deck (LSD), main deck (LST)
SD - super deck

TD - tank deck
UV - upper vehicle
VSA - visual stowage area
WD - well deck

APPENDIX C

LANDING FORCE SPACES

Maintenance

Shipboard manning constraints, inadequate funding, and operational/training requirements impact maintenance on every ship. Responsibility for the maintenance, upkeep, and cleanliness of LF spaces belongs to the division officer with oversight provided by the department head. The CCO has two responsibilities with regard to LF spaces, oversight and support.

Oversight

The CCO performs an oversight function similar to that performed by the ship's XO. The messing and berthing inspection performed by the XO provides an opportunity to evaluate the current maintenance state and quality of life (QOL) conditions in the ship's crew areas. Due to the vast number of shipboard spaces, the XO cannot possibly perform a like inspection of LF spaces. Instead, the XO uses the CCO as the executive agent for conducting routine inspections of the LF spaces. This assessment, using the checklist found in figure C-1, pages C-6 and C-7, is designed to evaluate the current maintenance, upkeep, and cleanliness status. The CCO should schedule monthly inspections of the LF spaces. Once a space has been evaluated, the CCO should present the results to the XO for comments and provide a copy of the results to the department head responsible for the space. The inspection checklist includes the quantities of items required to be maintained in/for the space and the quantity on-hand in accordance with the original design or as modified by approved ship alterations. The minimum data the CCO should be tracking includes—

- Compartment name.
- Compartment number.

- Department/division.
- Discrepancy.
- Date identified.
- Date corrected.
- Ship's force work list (SFWL) action complete.
- Parts ordered.
- 2K request for work required.
- 2K submitted.
- Preventive maintenance-annual (PMA) screening required.
- PMA screening completed.

Support

The second responsibility is one of support to the department heads and division officers. The support provided includes assistance in sourcing repair parts, technical assistance, and as an advocate for soliciting LF support of habitability upgrades when troops are embarked. Normally, the LF is amenable to providing personnel to support QOL support initiatives. Obviously some detailed prior planning must occur prior to deployment to ensure that the required materials are available and on-hand prior to the ship departing homeport. A monthly zone inspection is also a way to identify discrepancies previously unidentified.

Each ship should have a phased replacement program for procurement of consumable materials such as bedding, maintenance parts, tile, paint, lockers, mattresses, and other material requirements without depleting a large amount of the ship's operating budget at one time. Coordination with the ship's SupO and XO can be beneficial in making this program a viable means by which to maintain and upgrade these spaces. To effect a "phased replacement" it is recommended that the date items are received or put into service be neatly stamped or marked on the item with indelible ink. The following replacement planning factors are

provided as a guide. Some items may require earlier replacement:

- Mattresses—5 years.
- Mattress cover—5 years w/mattress (assumes proper care).
- Pillows—7 years.
- Sheets—2 deployments (mandatory weekly washings increase wear).
- Blankets—10 years.

Funding deficiencies will always pose a significant challenge to QOL initiatives. The CCO, in concert with the ship's department heads, should maintain a comprehensive list of unfunded requirements. The CCO should be prepared to provide a detailed spending plan that identifies the unit and total costs by item (e.g., mattress, pillows, blankets, etc.). Supporting documentation that reflects the distribution of the required assets, by compartment, will make it easier to distribute assets once they are received. COMNAVSURFPAC/LANT routinely solicits inputs from the afloat commands for unfunded requirements.

NAVSEA Habitability Self-Help Program

This is a Chief of Naval Operations-sponsored, highly cost-effective program for type commanders and ship COs to make their ships more livable. It uses the labor skills of the ship's force to accomplish habitability improvements with NAVSEA providing overall management, engineering services, procurement identification, procurement document preparation, project coordination, and onboard technical assistance during the work process. Chief of Naval Operations Instruction (OPNAVINST) 9640.1, *Shipboard Habitability Program*, provides more detailed guidance. The primary objectives of the program are to—

- Improve the quality of life by meeting the current Chief of Naval Operations standards.

- Increase berthing accommodations (when possible) for operators of new weaponry and ships systems.
- Decrease installation costs through use of ship's force labor with technical assistance provided by naval sea (NAVSEA).

Since this is the ship's project, the type commander, NAVSEA, immediate superior in charge, and supply activities are all dedicated to providing the necessary support and assistance. However, the success of an individual self-help project depends on the commitment of the ship's force to ensure the project through to completion.

Under this program, the baseline berthing installation requirements include—

- Replacing berths with modular berths, privacy partitions, and berth curtains arranged in six-person cubicles, as practical, with 10 percent long berths. Total number of new berths shall be equal to or exceed existing berthing and as a minimum shall provide one berth per accommodation.
- Redistributing air supply terminals to provide overhead diffusers.
- Providing lockers for stowage of clothing and personal effects.
- Redistributing overhead lighting to conform to new arrangements. Providing one berth light per accommodation and mirror lights as required.
- Providing a means of secondary egress if one does not exist and berthing capacity exceeds 21 personnel.
- Providing recreation/lounge area in berthing compartments segregated from sleeping area, if total bunk count and locker cube meets minimum requirements.
- Providing storage for iron and ironing board.
- Providing bulletin boards, watch, quarters, and station boards, and mirrors.
- Installing berth curtains.
- Painting compartment.
- Replacing deck tile.

Under this program, the baseline sanitary space installation requirements include the following actions:

- Removing and replacing fixtures as required in quantities to meet habitability standards. Rearranging to provide required clearances, privacy, and access.
- Installing new corrosion-resistant stainless steel countertop lavatory units, water closet partitions (supported from the overhead and bulkhead), urinal supports and dividers, shower partitions and, if space permits, drying areas.
- Installing new shelving, soap dishes, and accessories.
- Modifying the ventilation distribution system for efficiency and to suit the new arrangement.
- Enclosing or insulating the water heater located within the space.
- Modifying piping to suit new arrangement and replacing any deteriorated piping.
- Installing improved lighting and receptacles to accommodate the new arrangement.
- Installing new deck covering. The deck covering should be replaced with ceramic tile in accordance with the naval ships technical manual.
- Preparing and painting the space in accordance with naval ships technical manual.
- Installing service sink and cleaning gear locker where practical.

Troop Bedding

Commanding officers of amphibious ships are required to provide bedding to all assigned personnel including passengers, embarked staffs, and troops. The quantity should equal that of the ship's company. Minimum quantities to be maintained onboard for each individual are—

- One mattress.
- Four sheets.

- One blanket for Naval Surface Fleet, Atlantic (NAVSURFLANT), two blankets for Naval Surface Fleet, Pacific (NAVSURFPAC).
- One pillow.
- Two pillow cases.

The cost of procuring organizational bedding is funded through the ship's operating target funds. Troop bedding should be marked for easy identification, such as dyeing or stenciling. This acts as a deterrent for personnel seeking to use troop bedding as a means of replacing lost or damaged crew bedding.

The embarked troop regulations should outline the ship's established troop bedding turnover procedures. These procedures should identify how bedding will be cleaned, inventoried, bundled, and stored. It should also identify the issue and receipt, and accountability procedures to be used when issuing troop bedding to embarking LF elements.

One joint decision, which must be made by the COT and the XO, pertains to extended laundry hours for troop use prior to debarkation. In an effort to expedite the turnover of spaces, some commanders will want to have troops use their sleeping bags or poncho liners the last two or three nights. This allows them time to use LF personnel to wash, fold, inventory and bundle troop bedding. Other troop commanders have opted to leave personnel on the ship to perform these tasks while the ship transits to homeport. The key point is that the LF is responsible for returning troop bedding in the same condition in which it was received from the ship. Augmentation by ship's personnel is recommended for validation of quantities of bedding per bundle.

Reimbursement for Assessed Damages

The pre-embarkation and debarkation shipboard accommodations inspections (COMNAVSURFLANT) or the shipboard inspection summary (COMNAVSURFPAC) reports are used to document

the LF space material conditions before and after the deployment. They represent the source documentation for assessing damages caused by LF personnel. It is the ship's responsibility to accurately assess damages. However, this should be accomplished jointly with LF representatives so that a mutually agreed upon dollar value is determined. If the COT and ship's CO do not reach an agreement, the matter is forwarded to COMNAVSURFPAC/LANT, via the commander, amphibious squadron (COMPHIBRON) and commander, amphibious group (COMPHIBGRU), for arbitration with COMMARFORPAC/LANT. In these instances it is imperative that the ship have the appropriate documentation to support their claim. Once the assessed value of the damages is determined, the following procedures should be followed.

Before departing the ship, the LF and ship's representative should be in agreement on the assessed damages/costs. If the assessment is in dispute at the time of debarkation, then the dollar value of the damages must be outlined in detail in the inspection results. Once resolved at the COMMARFORLANT/PAC and type commander level, funding for the damages will be transferred to the ship. The ship's CCO must provide constant updates to the respective COMPHIBRON (while assigned) and COMPHIBGRU CCO on the status of the reimbursement until payment is received.

Once the ship receives the money, it is imperative that the funds be used to purchase the necessary materials to repair the damaged LF spaces.

Sourcing Repair Parts

Many sources are available to the ship for maintaining and upgrading LF spaces. The most commonly used sources include—

- Manufacturing by a local vendor.
- Manufacturing by the shore intermediate maintenance activity or the command's hull technician or material readiness shop (consult with the ship's CHENG).

- Procuring through the naval supply system.
- Sourcing from inactive ships or from ships scheduled for decommissioning.
- Investigating the availability of assets from COMPHIBGRU held or controlled stocks.
- Querying the Defense Reutilization and Marketing Office Internet web site for available assets
- Querying other ships to determine if they have excess assets.

Landing Force Space Use When Troops are not Embarked

The use of LF-designated spaces when troops are not embarked is permitted with the following limitations: The permanent conversion of LF spaces to ship's use requires that an approved ship alteration be held on file. These ship alterations must be approved up through the Headquarters, United States Marine Corps level. This requirement includes changing the compartment label plate; reconfiguration or rearrangement of the space that alters it from its original design; the removal of any fittings, equipment or furniture; or installation of new equipment items. If there is a doubt as to whether or not the intended modification/alteration is an approved ship alteration, the CCO should contact the CHENG and COMNAVSURFPAC/LANT port engineer for a copy of the ship alteration documentation.

Commanding officers of amphibious warfare ships are authorized to use troop spaces for temporary requirements as long as the space can be restored to their original configuration within 48 hours. The spaces temporarily used by the ship will not be arbitrarily deleted from the SLCP. Previous issues of the SLCP and the ship's booklet of general plans should be consulted when identifying changes. All troop spaces occupied by the ship on a temporary basis will be vacated if requested by the LF.

Points of Contact

The NAVSURFPAC point of contact is N4312C, Habitability Engineer; the NAVSURFLANT point of contact is N431A2/21, Habitability Engineer, for coordinating and supporting improvements to LF spaces. Naval messages are strongly recommended and formalize the process and forces commands to either act on the request or highlight it as a future unbudgeted requirement.

Inspection Checklists

LF spaces will undergo a number of inspections. Whether these inspections are conducted prior to embarking or debarking LF elements or the everyday inspections conducted by ship's combat cargo personnel, the desire for consistency is the same. Figures C-1 through C-9, pages C-6 through C-16, are baseline LF space inspection checklists to help ship personnel and embarking

units during pre-embarkation and debarkation inspection processes.

Documenting discrepancies with a checklist is the first step in initiating corrective measures. Combat cargo personnel must consolidate discrepancies in an automated fashion for ease in tracking shipboard corrective measures. Tracking can be easily accomplished through spreadsheets or database. An automated discrepancy tracking system will validate an SFWL, 2K, and PMA screening actions and parts ordering process. The addition of data elements that allow combat cargo personnel to identify the "date identified" and "date corrected" as it relates to a specific discrepancy is also important. The value of these data elements when attempting to incite corrective actions from the ship's division officers and department heads cannot be overemphasized.

A proactive and aggressive approach to documenting LF space maintenance requirements must be part of the daily routine for all combat cargo personnel. These processes also expedite inspections conducted by embarking LF personnel.

COMPARTMENT NUMBER:
COMPARTMENT NAME:

DATE INSPECTED:
DEPT/DIV:

ITEM	REQUIRED QUANTITY	ON-HAND QUANTITY	EMBARK SAT/UNSAT	DEBARK SAT/UNSAT	REMARKS
Bunks (Normal)					
Bunks (Surge)					
Tricing Straps					
Bunk Safety Rails					
Mattresses					
Mattress Covers					
Pillows					
Pillow Cases					
Sheets					
Blankets					
Curtains					
Bunk Lights w/Covers					
Bunk Light Switches					
Bunk A/C Outlets					
Coffin Lockers w/ Drawers					
Coffin Locker Locks					
Coat Hooks					
EEBDs					
EEBD Holders					
Irons					
Ironing Boards					
Ironing Board Lockers					
Invalid Food Tray Lockers					
Decon Medical Locker					
Soiled Clothes Locker					
Protective Clothing Locker					
Life Jacket Locker #					
Life Jacket Locker #					
Life Jacket Locker #					
Life Jacket Locker #					
Life Jacket Locker #					
Life Jacket Locker #					
Life Jacket Locker #					
Life Jacket Locker #					
Individual Lockers					
Locker Drawers					
Locker Handles					
Rifle Racks					
Rifle Rack Adapters					
Rifle Retaining Plates					
Drinking Fountain					
Cleaning Gear Locker					
Red Emergency Deck Lights					
White Lights w/Covers					
Overhead Red Lights w/Covers					
Light Switches w/Covers					

Figure C-1. Landing Force Troop Berthing Compartment Inspection Checklist.

ITEM	REQUIRED QUANTITY	ON-HAND QUANTITY	EMBARK SAT/UNSAT	DEBARK SAT/UNSAT	REMARKS
Electrical Outlets w/Covers					
Thermostats					
Vents w/Covers					
Vent Piping					
Battle Lanterns					
TV w/Stand (Serial #s)					
Telephone/IVCS					
1MC Speakers					
Entertainment Speakers					
Bulletin Boards					
Tables					
Stackable Chairs					
Lounge Chairs					
Wall Locker Mirrors w/Lights					
Mirrors					
Mirror Lights					
Waste Receptacles					
Fire Extinguishers (Serial #s)					
Clocks					
Mail Boxes					
Bulkheads					
Bulkhead Lagging					
Pipe Lagging					
Decks					
Doors/Hatches					
Buffers (Serial #s)					

Overall Remarks:

 Divisional Rep Signature/Date

 Landing Force Rep Signature/Date

 CCO Initials/Date

 COT Initials/Date

 XO Signature/Date

XO Comments:

Figure C-1. Landing Force Troop Berthing Compartment Inspection Checklist (Continued).

COMPARTMENT NUMBER:
COMPARTMENT NAME:

DATE INSPECTED:
DEPT/DIV:

ITEM	REQUIRED QUANTITY	ON-HAND QUANTITY	EMBARK SAT/UNSAT	DEBARK SAT/UNSAT	REMARKS
Storage Bins/Lockers					
Locker Drawers					
Locker Handles					
White Lights w/Covers					
Overhead Red Lights w/Covers					
Light Switches w/Covers					
Electrical Outlets w/Covers					
Vents w/Covers					
Vent Piping					
Battle Lanterns					
1MC Speakers					
Fire Extinguishers					
Bulkheads					
Bulkhead Lagging					
Pipe Lagging					
Door/Hatches					
Decks					

Overall Remarks:

Divisional Rep Signature/Date

Landing Force Rep Signature/Date

CCO Initials/Date

COT Initials/Date

XO Signature/Date

XO Comments:

Figure C-2. Landing Force Troop Storage Compartment Inspection Checklist.

COMPARTMENT NUMBER:
COMPARTMENT NAME:

DATE INSPECTED:
DEPT/DIV:

ITEM	REQUIRED QUANTITY	ON-HAND QUANTITY	EMBARK SAT/UNSAT	DEBARK SAT/UNSAT	REMARKS
Toilets					
Toilet Seats					
Toilet Paper Holders					
Toilet Stall Doors w/Locks					
Toilet Stall Handrails					
Urinals					
Sink Lights w/Covers					
Sinks					
Sink Stoppers					
Sink Hot/Cold Faucets					
Soap Dish, Sink					
Mirrors					
Shelves					
Towel Racks/Hooks					
Soap Dispensers					
Hand Dryer					
Space/Radiant Heaters					
Mounted Waste Receptacles					
Other Trash Receptacles					
Paper Towel Holders					
Showers w/Mats & Curtains					
Shower Heads					
Shower Deck Drains					
White Lights w/Covers					
Overhead Red Lights w/Covers					
Light Switches w/Covers					
Electrical Outlets w/Covers					
Vents w/Covers					
Vent Piping					
Battle Lanterns					
1MC Speakers					
Fire Extinguishers					
Bulkheads					
Bulkhead Lagging					
Pipe Lagging					
Doors/Hatches					
Decks					

Overall Remarks:

Divisional Rep Signature/Date

Landing Force Rep Signature/Date

CCO Initials/Date

COT Initials/Date

XO Signature/Date

XO Comments:

Figure C-3. Landing Force Troop Washroom Inspection Checklist.

COMPARTMENT NUMBER:
COMPARTMENT NAME:

DATE INSPECTED:
DEPT/DIV:

ITEM	REQUIRED QUANTITY	ON-HAND QUANTITY	EMBARK SAT/UNSAT	DEBARK SAT/UNSAT	REMARKS
White Lights w/Covers					
Storage Bins/Lockers					
Locker Drawers					
Locker Handles					
White Lights w/Covers					
Overhead Red Lights w/Covers					
Light Switches w/Covers					
Electrical Outlets w/Covers					
Vents w/Covers					
Vent Piping					
Battle Lanterns					
1MC Speakers					
Fire Extinguishers					
Bulkheads					
Bulkhead Lagging					
Pipe Lagging					
Decks					
Horizontal Rifle Racks					
Vertical Rifle Racks					
Rifle Rack Keys					
Rifle Rack Lock Cylinders					
Doors/Hatches					

Overall Remarks:

Divisional Rep Signature/Date

Landing Force Rep Signature/Date

CCO Initials/Date

COT Initials/Date

XO Signature/Date

XO Comments:

Figure C-4. Landing Force Troop Rifle Stowage Compartment Inspection Checklist.

COMPARTMENT NUMBER:
COMPARTMENT NAME:

DATE INSPECTED:
DEPT/DIV:

ITEM	REQUIRED QUANTITY	ON-HAND QUANTITY	EMBARK SAT/UNSAT	DEBARK SAT/UNSAT	REMARKS
Copiers					
Desks					
Desk Lamps					
Shelves					
Storage Cabinets/Bins					
Tables					
Chairs w/o Arms					
Chairs w/Arms					
Filing Cabinets					
Filing Cabinets (Locking)					
Safes					
Battle Lanterns					
Telephones					
1MC/3MC Speakers					
Bulletin Boards					
Map Board					
Worktables/Benches					
Waste Receptacles					
Radios/Secure Voice					
Radios/Nonsecure Voice					
Clocks					
White Lights w/Covers					
Storage Bins/Lockers					
Locker Drawers					
Locker Handles					
White Lights w/Covers					
Overhead Red Lights w/Covers					
Light Switches w/Covers					
Electrical Outlets w/Covers					
Vents w/Covers					
Vent Piping					
1MC Speakers					
Fire Extinguishers					
Bulkheads					
Bulkhead Lagging					
Pipe Lagging					
Decks					
Doors/Hatches					

Overall Remarks:

Divisional Rep Signature/Date

Landing Force Rep Signature/Date

CCO Initials/Date

COT Initials/Date

XO Signature/Date

XO Comments:

Figure C-5. Landing Force Troop Work/Office Compartment Inspection Checklist.

COMPARTMENT NUMBER:
COMPARTMENT NAME:

DATE INSPECTED:
DEPT/DIV:

ITEM	REQUIRED QUANTITY	ON-HAND QUANTITY	EMBARK SAT/UNSAT	DEBARK SAT/UNSAT	REMARKS
Desk					
Swivel Chair w/Wheels					
Chairs w/Arms					
Lounge Chairs					
Couch					
Round Table					
Coffee Table					
Table Lamps					
Standing Shelves					
Hanging Bookshelves					
Standing Bookshelves					
Chest of Drawers					
TV/VCR					
TV Stand					
Wall Lamps					
White Lights w/Covers					
Light Switches w/Covers					
Electrical Outlets w/Covers					
Thermostat					
Vents w/Covers					
Waste Receptacles					
Telephone					
Ceilings					
Vent Piping					
Battle Lantern					
Bulkheads					
Doors/Hatches					
Deck					

Overall Remarks:

Divisional Rep Signature/Date

Landing Force Rep Signature/Date

CCO Initials/Date

COT Initials/Date

XO Signature/Date

XO Comments:

Figure C-6. Landing Force Troop Officer Cabin Inspection Checklist.

COMPARTMENT NUMBER:
COMPARTMENT NAME:

DATE INSPECTED:
DEPT/DIV:

ITEM	REQUIRED QUANTITY	ON-HAND QUANTITY	EMBARK SAT/UNSAT	DEBARK SAT/UNSAT	REMARKS
Bunks (Normal)					
Bunks (Surge)					
Mattresses					
Mattress Covers					
Pillows					
Pillow Cases					
Sheets					
Blankets					
Curtains					
Bunk Lights w/Covers					
Bunk Light Switches					
EEBDs					
EEBD Holders					
White Lights w/Covers					
Overhead Red Lights w/Covers					
Light Switches w/Covers					
Electrical Outlets w/Covers					
Thermostat					
Vents w/Covers					
Vent Piping					
Safes					
Chairs					
Waste Receptacles					
1MC Speakers					
Entertainment Speakers					
Coat Hooks					
Standup Lockers					
Standup Lockers w/Drawers					
Entertainment Speaker					
Battle Lanterns					
Telephone					
Sink w/Light					
Towel Racks					
Soap Dish					
Cup/Toothbrush Holders					
Mirrors					
Mirror Lights					
Bulkheads					
Bulkhead Lagging					
Pipe Lagging					
Doors/Hatches					
Deck					

Figure C-7. Landing Force Troop Officer Stateroom Inspection Checklist.

Overall Remarks:

Divisional Rep Signature/Date

Landing Force Rep Signature/Date

CCO Initials/Date

COT Initials/Date

XO Signature/Date

XO Comments:

Figure C-7. Landing Force Troop Officer Stateroom Inspection Checklist (Continued).

COMPARTMENT NUMBER:
COMPARTMENT NAME:

DATE INSPECTED:
DEPT/DIV:

ITEM	REQUIRED QUANTITY	ON-HAND QUANTITY	EMBARK SAT/UNSAT	DEBARK SAT/UNSAT	REMARKS
Storage Bins/Lockers					
Locker Drawers					
Locker Handles					
White Lights w/Covers					
Overhead Red Lights w/Covers					
Light Switches w/Covers					
Electrical Outlets w/Covers					
Vents w/Covers					
Vent Piping					
Battle Lanterns					
1MC Speakers					
Fire Extinguishers					
Bulkheads					
Bulkhead Lagging					
Pipe Lagging					
Decks					
Doors/Hatches					

Overall Remarks:

Divisional Rep Signature/Date

Landing Force Rep Signature/Date

CCO Initials/Date

COT Initials/Date

XO Signature/Date

XO Comments:

Figure C-8. Landing Force Troop Officer Storage Room Inspection Checklist.

COMPARTMENT NUMBER:
COMPARTMENT NAME:

DATE INSPECTED:
DEPT/DIV:

ITEM	REQUIRED QUANTITY	ON-HAND QUANTITY	EMBARK SAT/UNSAT	DEBARK SAT/UNSAT	REMARKS
Toilets					
Toilet Seats					
Toilet Paper Holders					
Toilet Stall Doors w/Locks					
Toilet Stall Handrails					
Urinals					
Sink Lights w/Covers					
Sinks					
Sink Stoppers					
Sink Hot/Cold Faucets					
Soap Dish, Sink					
Mirrors					
Shelves					
Towel Racks/Hooks					
Soap Dispensers					
Hand Dryer					
Space/Radiant Heaters					
Mounted Waste Receptacles					
Other Trash Receptacles					
Paper Towel Holders					
Showers w/Mats & Curtains					
Shower Heads					
Shower Deck Drains					
White Lights w/Covers					
Overhead Red Lights w/Covers					
Light Switches w/Covers					
Electrical Outlets w/Covers					
Vents w/Covers					
Vent Piping					
Battle Lanterns					
1MC Speakers					
Fire Extinguishers					
Bulkheads					
Bulkhead Lagging					
Pipe Lagging					
Doors/Hatches					
Decks					

Overall Remarks:

 Divisional Rep Signature/Date

 Landing Force Rep Signature/Date

 CCO Initials/Date

 COT Initials/Date

 XO Signature/Date

XO Comments:

Figure C-9. Landing Force Troop Officer Washroom Inspection Checklist.

APPENDIX D

GENERAL ADMINISTRATION

This appendix focuses on the major supporting references and general administration procedures combat cargo personnel must rely on during their assignments. An integral part of the general administration process is the development and routine maintenance of desktop procedures and turnover folders. The hazards associated with shipboard life and forward presence mandate that replacement personnel are integrated as quickly as possible. This same precept holds true during the normal turnover process wherein the expeditious and detailed passing of information warrants a concise and organized approach.

Ship's Loading Characteristics Pamphlet

The SLCP is a tabulation of the principal characteristics of a ship that pertain to embarkation. It contains the ship's military lift characteristics in ready reference format and is based on the data in the ship's booklet of general plans and the ship's present configuration as modified by authorized alterations. It provides the detailed information required by embarkation planners to plan the loading of a particular amphibious ship. The reference, COMNAVSURFLANTINST 9010.2/COMNAVSURFPACINST 9010.1, *Ship's Loading Characteristics Pamphlet (SLCP)*, provides the standard prescribed format and instructions for SLCP preparation. The CCO is responsible for the timely and accurate review, update, and promulgation of the SLCP.

Embarked Troop Regulations

The embarked troop regulations are an official document prepared by the ship's CCO and signed/approved by the ship's CO.

It is recommended that the troop regulations also be made available to the lowest troop level possible in excerpt or abbreviated form to facilitate promulgation. The excerpts may be developed and distributed by the ship's CCO. Should the ship's CO elect not to distribute an excerpt, the CCO should provide an electronic copy of the regulations to embarking LF elements to facilitate their efforts in this regard.

Each amphibious ship's CCO is required to promulgate regulations for the CO governing embarked troops. The contents of these regulations are of interest to the leadership of company-sized and larger units. The CCO should ensure that every battalion/squadron and the COT receive a minimum of two copies for their command. This distribution can occur during scheduled load planning conferences or via electronic means. The regulations must be approved by the ship's CO and should contain the following minimum information:

Command Relationships

- Commanding officer.
- Commanding officer of troops.
- Separate Marine unit commanding officer.
- Embarked USMC, Army, Air Force units and passengers.
- Authority of officers embarked as passengers.
- Executive officer of the ship.
- Command duty officer.
- Officer of the deck.
- Combat cargo officer.
- Indoctrination of embarked units.
- Officers' call and eight o'clock reports.

Embarkation

- Additional duty assignments for embarked officers.
- Ship's platoon.
- The advance party.
- Inspections.
- Cargo.
- Embarkation plans and documents.

Billeting

- Billeting officer.
- Billeting plans.
- Officer billeting.
- Staff noncommissioned officer billeting.
- Female berthing.
- Special berthing considerations.
- Bedding.
- Compartment facilities, electrical appliances, entertainment systems, and climate control.
- Berthing regulations.

Messing

- Officers messing.
- Uniforms for embarked officers.
- Wardroom seating.
- Mess bills.
- Staff noncommissioned officer/chief petty officer mess.
- E-6 mess.
- Troop mess officer.
- Medical examinations.
- Mess hours and late meals.
- Commuted rations.
- Marine battle messing (during general quarters).

Medical and Sanitation

- Sick call (location and hours).
- Sick bay regulations.
- Emergency first aid boxes.
- Pre-embarkation sanitation inspection.

Medical and Sanitation (Continued)

- Embarking sick personnel.
- Sick personnel left aboard.
- Barber facilities.
- Laundry facilities.
- Trash disposal.

Emergency Procedures

- Indoctrination.
- Participation.
- Emergency signals.
- General quarters.
- Fire/flood alarm.
- Chemical, biological, and radiological defense.
- Collision.
- Man overboard.
- Embarked personnel assistance.
- Prepare to abandon ship.
- Abandon ship.
- Life vests.
- Emergency breathing apparatus.
- Emergency destruction of classified material.

General Regulations

- Alcohol and narcotics.
- Boats and rafts.
- Government property.
- Liberty.
- Shore patrol.
- Lifelines and rails.
- Postal service.
- Recreation facilities.
- Restricted areas.
- Ship's store.
- Snack bar (if applicable).
- Smoking/tobacco products.
- Saluting and other signs of respect.
- Muster reports.
- General announcing system.

General Regulations (Continued)

- Telephone system.
- Uniform aboard ship.
- Water conservation.
- Taps.
- Security of personal effects.
- Cameras and radios.
- Orderliness in various service lines.
- Clothing.
- Quarterdeck etiquette.
- Ship's entertainment and closed circuit television system.
- Chapel services.
- Collective protection system (if applicable).
- Sunbathing.
- Cellular telephones.

Security

- Unauthorized dissemination of information.
- Darken ship.
- Ship's trail.
- Mail.
- Prohibited topics.
- Emission control.

Cleaning and Preservation

- Responsibility.
- Individual responsibility.
- Pre-embarkation inspection.
- Daily inspection.
- Head and washroom responsibility.
- Cleaning gear.
- Butt kits and trash.
- Debarkation clean-up.

Discipline and Confinement

- Responsibility for discipline.
- Disciplinary action.

Discipline and Confinement (Continued)

- Officers empowered to administer discipline.
- Searches.
- Treatment of prisoners.
- Ship's brig.
- Confinement.

Troop Security Force

- Establishment of the force/mission.
- Organization of the security force.
- Air department integrity.
- Troop guard.
- Control of the guard.
- Duties of the guard.
- Drills and inspection of the guard.
- Sentry posts.
- Special orders for the guard.
- General troop guard orders (guard officer, troop officer of the deck, Sergeant of the Guard, Corporal of the Guard, supernumerary).
- Special orders for each post (i.e., #1 upper vehicle stowage and well deck).
- Uniform and equipment.
- Guard messing.
- Guard berthing.
- Fire and security watches for troop living compartments (firewatches).

Ammunition and Hazardous Material Handling

- Ammunition.
- Ship's stowage facilities for petroleum, oils, and lubricants.
- Handling and stowage of fuels in portable containers.
- Petroleum, oils, and lubricants.
- Loose ammunition and weapons.
- Lithium batteries.
- Incendiary (thermite) grenades.

Debarkation

- Debarkation control.
- Flight deck aircraft operations.
- Hangar deck operations.
- Well deck operations.
- Assault debarkation control.
- Passenger manifest for assault helicopter operations.
- Administrative manifesting.
- Debarkation of personnel (air).
- Debarkation of personnel (surface).
- Cargo and vehicle debarkation (air).
- Cargo and vehicle debarkation (surface).
- Ship's elevators.
- Helicopter passenger instructions.

Communications

- Ship's communications officer.
- Troop communications officer.
- Joint message center/record message.
- Electromagnetic radiation hazards/emission control/hazards of electromagnetic radiation to ordnance.
- Internal telephone system (Jdial).
- Man-on-the-move.
- Sound-powered telephone system.
- General announcing system.
- Closed circuit television system.

Reports

- General.
- Embarked personnel material report.
- Pre-embarkation accommodations inspection report.
- Debarkation accommodations report.

Appendix A

- Personnel augmentation requirements from embarked organizations.
- Personnel augmentation requirements from embarked organizations to support 1,200 embarked personnel (matrix).

Appendix B

- Berthing space inspection checklist.
- Office space inspection checklist.
- Cleaning gear/supplies inspection checklist.

Desktop Procedures

Desktop procedures should be maintained for each combat cargo billet aboard ship. Topics, which should be included/addressed, are as follows:

- Billet description.
- Areas of responsibility.
- Required training.
- Relationship to other departments/divisions.
- Tools/equipment requirements.
- Personnel augmentation requirements for ship's platoon and 1 Alpha personnel.
- Communications requirements.
- Ship's points of contact.
- Safety requirements.
- Recall roster.
- Sample copy of required reports and their frequency.
- Synopsis of the phased replacement program and a list of those items included for maintenance/upkeep of LF spaces.
- Ship's short- and long-range schedule.

- Copy of the current logistics automated information system-generated unit deployment listing.
- Table of organization.

Turnover Folders

Combat cargo personnel should also maintain a turnover folder that includes, at a minimum, the following topics:

- Detailed description of tasks, duties, and responsibilities.
- Reference library inventory.
- Office equipment inventory.
- Internal (ship's) and external (higher and adjacent headquarters) points of contact.
- Collateral duty assignments.
- Ongoing LF space projects.
- Future LF space projects.
- Approved ship alterations and alterations equivalent to repair.
- Inspection results (to include inspection and survey, pre-embark/debark accommodations or shipboard inspection summary, and CO/XO).
- Detailed description of the daily routine.
- Sample internal correspondence documentation.
- Sample external correspondence documentation.
- Current budget and expenditure data.
- Administrative support procedures.
- Status of Marine Corps annual training requirements.
- Command organizational chart.

- Copies of previous command bulletins outlining onload/offload plans for supplies, equipment, LFORM and ammunition.
- Current inventory of ships lashing, cargo strap, tie down, and material handling equipment and the ship's automated equipment list.

Inspections and Evaluations

There are no administration specific inspections that evaluate the administrative health of a ship's combat cargo section. However, there are two opportunities that can be used to assess administrative readiness:

- The first such opportunity is in conjunction with visits by the force, group or PHIBRON CCOs. In addition to assessing the overall condition and maintenance of LF spaces, these officers may elect to evaluate the administrative readiness using the checklist reflected in appendix C.
- The second opportunity occurs during the turnover process. The relieving CCO and senior CCA should have a mechanism in place by which they can quickly gauge the overall administrative readiness of combat cargo. This can best be accomplished through the use of a turnover checklist. This checklist serves as a means by which to standardize the assessment process and as a ready reference for the conduct of a methodical, organized turnover. Once complete, the results can be appended as an enclosure to assumption of duties letter normally provided to the ship's CO. Each CCO should consult his respective PHIBRON/PHIBGRU CCO for more information.

APPENDIX E

CLASSES OF SUPPLY

CLASS	SUB-CLASS	SUB-CLASS DESCRIPTION	GENERAL DESCRIPTION
I	A	Air (In-flight Rations)	Subsistence including gratuitous health and welfare items.
	R	Refrigerated Subsistence	
	S	Non-refrigerated	
	C	Combat Rations	
II	B	Ground Support Material	Clothing, individual equipment, tentage, organizational tool sets and tool kits, hand tools, administrative and housekeeping supplies and equipment.
	E	General Supplies	
	F	Clothing and Textiles	
	M	Weapons	
	T	Industrial Supplies	
III	A	Air	Petroleum, oils, and lubricants (packaged or bulk).
	W	Ground	
IV	NA	NA	Construction material to include installed equipment and all fortification/barrier materials.
V	A	Air	Ammunition of all types to include conventional, chemical, biological, radiological, and special weapons.
	W	Ground	
VI	NA	NA	Personal demand items.
VII	Air	Air	Major end items; a final combination of end products which is ready for its intended use; e.g., launchers, tanks, mobile machine shops, and vehicles.
	B	Ground	
	D	Administrative Vehicles	
	G	Electronics	
	K	Tactical Vehicles	
	L	Missiles	
	M	Weapons	
	N	Special Weapons	
VIII	A	Medical/Dental Material	Medical material including medical-unique repair parts.
	B	Blood and Blood Products	
IX	A	Air	Repair parts and components to include kits, assemblies and sub-assemblies, repairable and nonrepairable for maintenance support for all equipment.
	B	Ground	
	D	Administrative Vehicles	
	G	Electronics	
	K	Tactical Vehicles	
	L	Missiles	
	M	Weapons	
	N	Social Weapons	
	T	Industrial Supplies	
X	NA	NA	Material to support nonmilitary programs; e.g., agricultural and economic development.

APPENDIX F

AMMUNITION COMPATIBILITY CHART

AMMUNITION - GROUP AA																
A005	A130	A576	AX14	B643	D509	F562	G955	K092	L275	L540	M031*	M688	MG40	N278	PE96	4W28
A011	A131	A605	B504	B647	D510	FW92	G963	K143	L283	L541	M162	M766	MG61	N285	PL23	4W29
A014	A136	A606	B505	C226	D514	G213	H567	K180	L302	L542	M174	M814	MJ21	N286	PL87	4W73
A017	A140	A608	B506	C256	D515	G214	H812	K181	L304	L543	M190	M842	MJ91	N289	PL89	9W23
A023	A165	A665	B508	C380	D532	G215	H842	K250	L306	L544	M193	M845	ML03	N290	PL95	9W24
A024	A171	A676	B509	C445	D533	G216	H893	K867	L307	L580	M308	M862	MM91	N340	PM80	
A059	A191	A677	B519	C449	D540	G217	H930	K870	L311	L585*	M500	M905	MM92	N463*	PV66	
A063	A260	A692	B534	C479	D541	G382	H931	K885	L312	L594	M514	M997	MM93	N464*	SS01	
A064	A358	A762	B535	C868	D544	G815	H933	L118	L314	L599	M543	MD15	MT23	N523	XW70	
A068	A362	A772	B542	C869	D563	G826	HX05	L131	L323	L601	M596	MD16	MT85	N659	XW77	
A071	A363	A896	B545	C870	D579	G881	HX06	L132	L324	L610	M597	MD65	MT95	PB55	XW78	
A075	A400	A974	B546	C871	D864	G895	HX07	L133	L325	LW53*	M627	MD66	MW02	PB69	XW79	
A080	A475	A975	B567	C995	DWBS	G911	HY71	L161	L328	LW60	M643	MF29	MW19	PB92	2W04	
A086	A518	A978	B568	D003*	E893	G924	J143	L193	L441*	LW62	M644	MF60	MW37	PB93	2W05	
A102	A552	A979	B576	D501	EW76	G930	J147	L201	L442	LX21	M647	MF66	MW56	PB97	2W11	
A106	A555	A981	B584	D502	F392	G940	J271	L227	L451	M012	M648	MF72	MW80	PC06	2W89	
A111	A557	A982	B627	D503	F470	G945	J329	L258	L495	M015	M670	MF78	MW82	PC91	3W80	
A112	A562	AX11	B642	D505	F534	G950	J345	L273	L518	M028*	M682	MG39	MW86	PD63	3W92	
AMMUNITION - GROUP BB																
A006	A063	A102	A140	A400	D501	FW92	HY71	M130	M644	M905	MG61	MM53	MM92	MW56	N290	XW77
A011	A064	A106	A165	A475	D502	G213	J329	M131	M648	M997	ML03	MM54	MM93	MW80	N331	XW78
A014	A068	A111	A171	AX11	E893	G214	K092	M193	M670	MD15	ML65	MM55	MT23	MW86	N335	XW79
A017	A071	A112	A191	AX14	EW76	G215	M028*	M308	M766	MD16	ML83	MM56	MW02	N278	N463*	4W28
A023	A075	A130	A260	C791	F739	G216	M031*	M500	M842	MF60	MM24	MM57	MW19	N285	N464*	4W29
A024	A080	A131	A362	C870*	F762	G217	M092	M627	M845	MG39	MM51	MM58	MW29	N286	N659	
A059	A086	A136	A363	D003*	F810	G382	M095	M643	M862	MG40	MM52	MM91	MW37	N289	XW70	

AMMUNITION - GROUP CC																
A005	A059	A080	A130	A191	AW29	E892	G215	K301	M627	M842	MF60	MM92	MW56	XW70		
A011	A063	A086	A131	A260	AX11	E893	G216	M028*	M643	M845	MG39	MM93	MW080	XW77		
A014	A064	A102	A136	A362	AX14	EW76	G217	M031*	M644	M862	MG40	MT23	MW86	XW78		
A017	A068	A106	A140	A363	DOO3*	FW92	G382	M193	M648	M905	MG61	MW02	N289	XW79		
A023	A071	A111	A165	A400	E488	G213	HY71	M308	M670	MD15	ML03	MW19	N463*	4W28		
A024	A075	A112	A171	A475	E510	G214	K295	M50	M766	MD16	MM91	MW37	N464*	4W29		
AMMUNITION - GROUP DD																
D003*	M029	M420	M591	M976	M984	ML04	ML12	ML17	MM26	MM34	MM41	MM46	MM53	MU43	N463*	
M003*	M030	M421	M757	M977	M986	ML05	ML13	ML18	MM30	MM35	MM42	MM47	MM54	MW18	N464*	
M023	M031	M456	M791	M980	M995	ML09	ML14	ML19	MM31	MM38	MM43	MM48	MU40	MW52		
M024	M032	M457	M792	M981	996	ML10	ML15	ML25	MM32	MM39	MM44	MM51	MU41	MW53		
M028*	M039	M485	M913	M982	M998	ML11	ML16	MM24	MM33	MM40	MM45	MM52	MU42	MW84		
AMMUNITION - GROUP FF																
A005	A024	A071	A106	A136	A260	AX11	C479	G215*	G937	L441*	MD15*	MT23*	XW77			
A011	A059	A075	A111	A140	A362	B630	D528	G216*	H855	L585*	MD16*	MW19*	XW78			
A014	A063	A080	A112	A165	A363	B646	D550	G217*	H9292	M193*	MG39*	MW80*	XW79			
A017	A064	A086	A130	A171	A400	C276	G213*	G382*	HY71	M643*	MG40*	MW86*	4W28*			
A023	A068	A102	A131	A191	A475	C477	G214*	G930	K867	M905*	MM93*	XW70*	4W29*			
AMMUNITION - GROUP GG																
G900	M598															
INERT																
A135	DWBH	F415	FW25	H121	HW49	LW05	LY57	M475	M480	M487	MM12	N291	PN15	1W18		
A501	DWBI	F448	FW90	H122	J416	LW25	M002	M476	M481	M914	MM14	NW20	PV18	1W73		
A560	DWBJ	F763	G811	HW01	J434	LX11	M098	M477	M483	ML06	MW28	NW33	PV47			
A924	E973	F766	GW03	HW02	JW83	LY15	M165	M478	M484	MM30	MW49	PL93	XW38			
C484	F017	F780	GW90	HW53	L111	LY53	M474	M479	M486	MM11	MW85	PN16	XW71			

APPENDIX G

EMBARKATION REPORTS

This appendix focuses on the standard operational embarkation reporting requirements less those associated with the management of LFORM or other munitions products. Ammunition-related reports are addressed in chapter 2. Specific due dates for reports are not outlined due to geographic variances in requirements. The CCO should refer to the appropriate instruction for details on submitting timelines. This is not an all inclusive list of embarkation reporting requirements. Additional reports required may vary.

Deployment Plan of Action and Milestone Reports/Messages

The following reports will be submitted in accordance with the embark milestones as delineated in the deployment plan of action and milestones:

Report name: Naval Support Element (NSE) Augmentation Message

Purpose: Identifies navy units required to perform tasks in support of operations

Responsibility: CATF/COMPHIBRON

Reference: JP 3-02.2, *Joint Doctrine for Amphibious Embarkation*

Prior to releasing the NSE augmentation message, the PHIBGRU CCO must solicit NSE lift requirements. This solicitation should be executed via a naval message to the commands that provide the elements comprising the NSE.

Once all of the inputs have been received, they are validated against the assigned mission and the prescribed NSE lift footprint baseline as established by the respective COMPHIBGRU. The COMPHIBRON CCO then consolidates the inputs into a single naval message for release to

interested commands. Figure G-1, on page G-2, provides a sample NSE augmentation message.

Report name: Organization for Embarkation and Assignment to Shipping

Purpose: Assigns embarking LF elements to designated shipping

Responsibility: Landing Force Commander

Reference: JP 3-02.2 (chapter 4, para 7a)

This message identifies the LF's intent relative to assigning specific units/organizations to assigned shipping. It also provides some initial planning information that will prove useful during the initial embarkation conference. (A sample of this report is not included in this appendix due to its length.)

Report name: Landing Craft Availability Table (LCAT)

Purpose: Identifies the quantity and type of landing craft to be embarked on each ship of the task force

Responsibility: CATF/COMPHIBRON

Reference: NWP 3-02.1, *Ship-to-Shore Movement*

Normally the landing craft mix for an ARG is determined 180 days prior to deployment. This information is required so that Commander, Naval Beach Group can ensure the appropriate training and crew workups are completed prior to deployment.

Completion of the LCAT requires one additional variable-the specific landing craft hull numbers. The CATF/PHIBRON can determine this information through coordination with the BEACHGRU detachment OIC. Figure G-2, on page G-3, provides a sample LCAT. When developing the LCAT, the CATF/ COMPHIBRON should coordinate with the embarking LF command element prior to releasing the message.

FM COMPHIBRON
 TO TWO TWO MEU
 INFO COMNAVSURFLANT NORFOLK VA//N3/N36//
 COMPHIBGRU TWO//N36//
 COMNAVBEACHGRU TWO
 COMSPECWARGRU TWO
 COMEODGRU TWO
 COMHELTACWINGLANT NORFOLK VA//N3//
 ACU TWO
 ACU FOUR
 BMU TWO
 COMSPECBOATRON TWO
 SEAL TEAM TWO
 FLTSURGTEAM TWO
 FLECOMPRON SIX
 EODMU TWO
 USS LEATHER NECK
 USS DEVIL DOG
 BT
 UNCLAS//N04600//
 MSGID/GENADMIN/COMPHIBRON TWO/0001/JAN//
 SUBJ/LF6F 1-99 NAVAL SUPPORT ELEMENT (NSE) AUGMENTATION LIFT DATA//
 REF/A/RMG/COMPHIBGRU TWO/1122337ZMAR97
 REF/B/DOC/JOINT PUB 3-01.2/DATE//
 NARR/REF A IS JOINT DOCTRINE ON AMPHIBIOUS EMBARKATION. REF B IS APPROVED BASELINE
 NSE LIFT FOOTPRINT FOR MARG/LF6F DEPLOYMENTS.//
 POC/JONES/GYSGT/COMPHIBRON TWO/-/TEL:DSN:123-4567//
 RMKS/1. IN ACCORDANCE WITH REFS A AND B, THE FOLLOWING NSE AUGMENTATION LIFT DATA IS
 PROVIDED FOR LF6F 1-99.
 A. NSE GRAND TOTALS

OFFICERS	E7-E9	E1-E6	TOTAL CUFT	TOTAL SQFT	TOTAL WT
----------	-------	-------	------------	------------	----------

 (NOTE: THE FIGURES REFLECTED IN THIS SUBPARAGRAPH ARE THE SUM TOTALS OF EACH OF THE
 INDIVIDUAL NSE TOTALS.)
 B. USS LEATHER NECK

(1) CPR STAFF					
OFFICERS	E7-E9	E1-E6	TOTAL CUFT	TOTAL SQFT	TOTAL WT
(A) SQFT REQUIREMENT					
NOMENCLATURE	QTY	LENGTH	WIDTH	HEIGHT	SQUARE TOTAL SQ TOTAL WT
(B) CUFT REQUIREMENT					
NOMENCLATURE	QTY	LENGTH	WIDTH	HEIGHT	SQUARE TOTAL SQ TOTAL WT

(2) COMNAVBEACHGRU TWO					
OFFICERS	E7-E9	E1-E6	TOTAL CUFT	TOTAL SQFT	TOTAL WT
(A) SQFT REQUIREMENT					
NOMENCLATURE	QTY	LENGTH	WIDTH	HEIGHT	SQUARE TOTAL SQ TOTAL WT
(B) CUFT REQUIREMENT					
NOMENCLATURE	QTY	LENGTH	WIDTH	HEIGHT	SQUARE TOTAL SQ TOTAL WT

 C. USS DEVIL DOG
 BT
 (NOTE: CONTINUE TO LIST NSE UNITS, BY SHIP, WITH THEIR ASSOCIATED PERSONNEL, SQUARE,
 AND CUBIC FOOT STOWAGE REQUIREMENT. ENSURE APPROPRIATE COMMENTS ARE INCLUDED REL-
 ATIVE TO NSE LANDING FORCE SPACE BERTHING REQUIREMENTS. ENSURE ALL HAZMAT, MUNITIONS,
 AND OTHER HOLD/TROOP STOW CARGO ITEMS ARE PROPERLY IDENTIFIED.)

Figure G-1. NSE Augmentation Message.

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FM COMPHIBRON
TO TWO TWO MEU
INFO COMNAVSURFLANT NORFOLK VA//N3/N36//
COMPHIBGRU TWO//N36//
COMNAVBEACHGRU TWO
ACU TWO
ACU FOUR
BMU TWO
USS LEATHER NECK
USS DEVIL DOG
USS WAR SHIP
BT
UNCLAS//N03100//
MSGID/GENADMIN/COMPHIBRON TWO/0001/JAN//
SUB/LF6F 1-99 LANDING CRAFT AVAILABILITY TABLE (LCAT)//
REF/A/DOC/NWP 22-3/DATE//
NARR/REF A IS NAVAL WARFARE PUBLICATION ON SHIP TO SHORE MOVEMENT.// //
POC/JONES/GYSGT/COMPHIBRON TWO/-/TEL:DSN:123-4567//
RMKS/1. IN ACCORDANCE WITH REF A, THE FOLLOWING LCAT IS PROVIDED.
    A. USS LEATHER NECK: LCAC-20, LCAC-22, LCAC-24
    B. USS DEVIL DOG: LCU-1640
    C. USS WAR SHIP: LCU-1657, LARC-55, LARC-56//
    
```

Figure G-2. Sample Landing Craft Availability Message.

Report name: Berthing and Loading Schedule (BALS)

Purpose: A coordinated CATF/CLF message that outlines the planned sequence of events relative to unloading the LF, to include the NSE, at all designated loading sites as required

Responsibility: CATF/COMPHIBRON

Reference: JP 3-02.2

The BALS is one of the most important messages the CATF/PHIBRON CCO will produce relative to unload execution. It is normally sent after the Final Embarkation Conference and after the LF has released its embarkation letter of instruction. The BALS should fully support the embarkation letter of instruction.

Figure G-3, on page G-4, provides a sample BALS. There are three key points that must be kept in mind when preparing this message for release:

The identification of unload support equipment (e.g., forklifts, cranes), numbers of personnel,

quantities of pallets, pieces of rolling stock, and onload means (e.g., cranes, ramps, landing craft) should be provided when known. Equally important are the onload site, methodology, and personnel involved. If reasonably expected that cargo, supplies, and equipment will be loaded in the homeport of a ship, clearly define this event. Including the plain language addresses of support personnel at the Naval Station Norfolk/San Diego, Naval Amphibious Base Little Creek, etc., will ensure that the desired onload support is ready to execute the onload plan.

Secondly, validate the BALS ship schedules with the events listed in the CATF/PHIBRON schedule of events. This is best accomplished through consultation with the AF Navy component operations staff officer (N-3) to ensure the two documents align. The CCO should also compare the BALS with the logistics request generated by the AF Navy component logistics staff officer (N-4) to ensure these documents are mutually supporting.

FM COMKSGARG
 TO TWO SIX MEU//S3/S4//
 KSGARG
 INFO COMMARFORLANT//G-3/G-4/SMO//
 COMNAVSURFLANT NORFOLK V//N3/N36//
 COMNAVAIRLANT NORFOLK VA//N41//
 COMPHIBGRU TWO//N3/N36//
 LIST EACH NSE DET AND THEIR PARENT COMMAND
 LIST OTHER SUPPORTING AGENCIES/COMMANDS AS REQUIRED
 BT
 UNCLAS //N04600//
 MSGID/GENADMIN/CPR-2//
 SUBJ/BERTHING AND LOADING SCHEDULE (BALS/ ISO LF6F/MARG 99-2//
 REF/A/DOC/JOINT PUB 3-02.2//
 REF/B/CONF/CPR2/21FEB99//
 NARR/REF A IS JOINT DOCTRINE PUB FOR AMPHIB EMB. REF B WAS LF6F/MARG 99-2 FINAL EMBARK PLANNING CONF (FEPC).//
 POC/I M INCHARGE/CAPT/CCO/TEL: (COMM) 757-444-4974/ (DSN) 564-4974
 RMKS/1. PER REFS (A) AND (B), SKED BELOW PROVIDES BALS FOR EMBARK OF 26 MEU.
 2. SHIPS WILL MAKE PCVT RPTS HOURLY VIA PCS COORD NET TO PCS ON 15 APR 99 FROM ONLOAD COMMENCEMENT TO COMPLETION.
 3. SKED AS FOLLOWS (READ IN THREE COLUMNS):

*****USS DEVIL DOG*****

DATE/TIME	EVENT	PLACE
24MAR99/0800-COMP	26 MEU SUPPLY BLOCK/MAP PACKAGE ARR NAVSTA NORFOLK	PIER 12/NAVSTA
25MAR99/0800-COMP	LOAD 26 MEU SUPPLY BLOCK/MAP PACKAGE	PIER 12/NAVSTA
12APR99/1600	26 MEU ADVANCE PARTY ARRIVE (APPROX 60 PERS)	PIER 12 NAVSTA
13APR99/0900-1100	TROOP STOW CARGO ARRIVE (APPROX 30 PALLETS)	PIER 12 NAVSTA
/1200-1700	26 MEU MAIN BODY ARRIVE (APPROX 850 PAXS)	PIER 12 NAVSTA
14APR99/0700	EMBARK EOC HMMWV PIERSIDE	PIER 12 NAVSTA
/0730	CCA ENROUTE CAMLEJ	PIER 12 NAVSTA
/0800-1100	26 MEU PRE-STAGE VEH/EQUIP UNDERWAY	RISELEY PIER/CAMLEJ
/0900	EMBARK LCAC 28/37/89 W/BMU	PIER 12 NAVSTA
/TBD	CLZ HMMWV AND PTM	VIC LYNNHAVEN ANCH
/1200	EMBARK SAR DET	UNDERWAY
/1230	ACE FLY-ON (HARRIERS)	UNDERWAY
/1300-COMP	CCA CONDUCT PRE-EMBARK VEH/EQUIP INSP	RISLEY PIER/CAMLEJ
15APR99/0630	ARRIVE CAMLEJ OPAREA	ONSLow BAY
/0700	LAUNCH LCAC'S/OFFLOAD BMU CLZ HMMWV	ONSLow BAY/BEACH
/0800	COMMENCE VEHICLE ONLOAD (15 LCAC LOADS)	ONSLow BAY/BEACH
/TBD	ACE FLY-ON (PERS)	ONSLow BAY/BEACH
/TBD	RECOVER PREBOAT LCACs	ONSLow BAY/BEACH

*****USS WAR SHIP*****

DATE/TIME	EVENT	PLACE
25MAR99/0800-COMP	LOAD 26 MEU SUPPLY BLOCK	PIER 16/NAB
12APR99/1200-1300	26 MEU ADV PARTY ARRIVE (APPROX 26 PAXS)	PIER 16/NAB
14APR99/0730	BOS'N ENROUTE CAMLEJ	PIER 12/NAVSTA
/0800-1100	26 MEU PRE-STAGE VEH/EQUIP UNDERWAY	MHC/RISLEY PIER
/0900	EMBARK LCAC 36/70 W/BMU	PIER 16/NAB
/TBD	5-TON/HMMWV/TRLR	VIC LYNNHAVEN ANCH
/1300-COMP	BOS'N CONDUCT PRE-EMBARK VEH/EQUIP INSP	MHC/CAMLEJ
15APR99/TBD	LAUNCH LCACs ENROUTE CAMLEJ	VIC MHC ONSLOW BCH
/0700	ARRIVE MHC PORT	MHC/BERTH 9 (STERN TO)
/0745	RO/RO RAMP IN PLACE	MHC/BERTH 9
/0800	LOAD TROOPS PIERSIDE (APPROX 225 PAXS)	MHC/BERTH 9
/0830	COMMENCE VEHICLE ONLOAD	MHC/BERTH 9
/1000	ONLOAD 12 PALS TROOP STOW CARGO	MHC/BERTH 9
/1300-1400	U/W MHC ENROUTE CAMLEJ OPAREA	MHC/BERTH 9
/TBD	ARR CAMLEJ OPAREA	ONSLow BAY/BEACH
/TBD	EMBARK M9 ACE/EXCAVATOR VIA LCAC	ONSLow BEACH
/TBD	RECOVER AAVs	ONSLow BEACH
/TBD	RECOVER PREBOAT LCACs	ONSLow BAY/BEACH

Figure G-3. Sample Berthing and Loading Schedule.

Finally, conduct follow-up phone calls with the appropriate supporting agencies at the ports of embarkation to ensure the messages are received and the level of support required is understood.

Report name: Ship Load Plans

Purpose: Provides the detailed embarkation data required to safely and efficiently load an amphibious ship

Responsibility: Commanding Officer of Troops

Reference: JP 3-02.2

Preparing detailed load plans is the sole responsibility of the COT and the designated TEO. However, the ship's CCO/first lieutenant must be an active participant in this process to include the exchange of automated systems electronic exports from approved logistics automated information management systems. This "ship's" data must include all data relative to embarked LFORM, MLA, EOD/SPECWAR/shipfill munitions products, forklifts, aviation ground support equipment, individual material readiness list, aviation consolidated allowance list, and any other commodity or cargo stowed or planned for stowage in LF spaces. This includes materials stowed or planned for stowage on the flight deck or hangar deck.

The ship's CCO/first lieutenant should also engage other shipboard departments during the load plan analysis phase and prior to the load plans submission to the ship's CO for his review and signature. The ship's company personnel who also review/comment on the load plan include the CHENG, damage control assistant, air boss, first lieutenant, ship's boatswain, XO, and other personnel based on ship specific requirements.

Report name: LFORM Supplement

Purpose: Provides munitions stowage diagrams and manifests for LFORM, MLA, SPECWAR, EOD and shipfill class V cargo when stowed in SLCP designated stowage locations

Responsibility: Each amphibious ship

Reference: COMNAVSURFLANTINST 4080.1/Marine Forces, Atlantic Order (MARFORLANTO) 4000.10, COMNAVSURFPACINST 4080.1/Marine Forces, Pacific (MARFORPACO) 4080.2

The LFORM supplement will be developed using currently fielded automated systems. The LFORM supplement development must begin through the construction of a database and include all munitions products (e.g., LFORM, MLA, EOD, SPECWAR, shipfill, etc.) stored in ships' magazines and other designated stowage locations. This database will also be used to document the data relative to available ground support equipment, individual material readiness list, MHE/CHE, and other materials stored in the designated LF storage areas to include the hangar and flight deck.

The database will be used to support the ship load planning process. Once the load planning process is complete, a copy of the electronic export file and a hard copy of the actual LFORM supplement will be provided to the respective COMPHIBGRU. This same information will also be provided to the PHIBRON and embarking LF elements. This will provide the LF with the necessary information to prepare a detailed ship's load plan by merging data on LF personnel, supplies, and equipment with the data contained in the LFORM supplement.

Report name: Shipboard Landing Force Accommodations Inspection or Shipboard Inspection Summary Reports

Purpose: The COT, accompanied by the ships CO or their designated representatives, conducts a joint pre-embark and debark LF accommodations inspection to ensure habitability standards are being maintained and to accurately identify and assess damages

Responsibility: Commanding Officer of Troops/ Ships Commanding Officer

Reference: COMNAVSURFLANTINST 3000.3/MARFORLANTO 4620.2, *Landing Force Spaces and Material Aboard COMNAVSURFLANT Ships*

Pre-embarkation and debarkation shipboard accommodations inspections or shipboard inspection summaries are required to advise the chain of command on the status of habitability in troop living compartments, the condition and state of maintenance of troop office/functional spaces,

and material handling equipment. Amphibious warfare ships by necessity are restricted in the facilities that can be provided for the comfort and convenience of embarked troops. Problems arising due to ship space constraints and/or facility limitations should normally be resolved within limits at the final embarkation conference. Problems that persist during ship deployments may be beyond the capability of the ship to correct and will be so noted on the reports.

The inspection of LF spaces should be conducted in sufficient detail to document potential damage claims. (The report should state that both the Navy and Marine Corps parties agree with the discrepancies noted.) In those circumstances when an agreement as to funding responsibility cannot be reached at the unit level, detailed reports will be forwarded via each unit's chain of command for resolution at the immediate superior in charge or type commander level.

The reports should not be limited to a summary of existing adverse conditions. Efforts by the crew to make conditions as habitable and workable as possible should be noted with appropriate comments in the inspection results.

Accommodation inspection results are prepared by the COT within 5 days of completion of embarkation and immediately prior to debarkation with the following exceptions:

- When the period of embarkation is far less than 14 days, and there are not adverse shipboard conditions, only the debarkation accommodations inspection will be submitted.
- When troop units debark for conduct of operations ashore (and will re-embark) and members of the unit remain aboard for security and housekeeping chores.
- Before submitting pre-embark or debark shipboard accommodations inspection results, the COT and the ship's CO must consult. It is imperative that any existing differences between the two commanders and their

respective commands be mutually resolved at their level whenever possible.

- Before debarkation (normally 2 to 3 days before offload for extended deployments), the COT, accompanied by the CO of the ship, or their designated representatives, will conduct a debarkation accommodations inspection. It is imperative the COT conducts a thorough inspection with the ship's representatives present and properly identifies discrepancies utilizing the same inspection checklists that were annotated during the pre-embarkation shipboard accommodations inspection.

The COT and the ship's SupO will determine funding responsibility and will prepare a letter of agreement signed by both the COT and the ship's CO. The letter will be prepared prior to the COT's departure and will contain the dollar amount of required repairs and the agency responsible for payment. This letter records the ship's and the LFs concurrence with the dollar value of assessed damages and allows for restitution to be made by the responsible agency. Omitting this information from the debarkation inspection results impedes the timely processing and preparation of command endorsements.

Report name: Landing Force Operational Reserve Material (LFORM) Shortfall/Ammunition Shortfall Message

Purpose: Identifies all Class V munitions shortfalls

Responsibility: Each amphibious ship

Reference: COMNAVSURFLANTINST 4080.1/MARFORLANTO 4000.10, COMNAVSURFPACINST 4080.1/MARFORPACO 4080.2

Detailed ammunition reporting procedures are outlined in chapter 2.

The CCO should be an active part of the ammunition reporting process. Doing so provides the ship's CO with a system of checks and balances. It is also an integral part of combat cargo's LFORM manager duties.

Post-Embarkation Reporting Requirements

The following reports are submitted with or after the LF embarks:

Report name: Embarked Personnel and Material Report

Purpose: Provides a concise manifest outlining, by unit or organization, the personnel, supplies, and equipment embarked aboard a ship

Responsibility: Each amphibious ship

Reference: COMNAVSURFLANTINST 3000.3/COMNAVSURFPACINST 4621.1A

Current policy states that the LFORM inspection report is submitted only if discrepancies exist.

Report name: LFORM Inspection Report

Purpose: Validate the overall general condition of embarked LFORM/MLA

Responsibility: Commanding Officer of Troops

Reference: COMNAVSURFLANTINST 4080.1/MARFORLANTO 4000.10 COMNAVSURFPACINST 4080.1/MARFORPACO 4080.2

The COT must conduct a visual inspection to determine the overall condition of embarked LFORM/MLA. This inspection is not intended as a mechanism for the conduct of a wall-to-wall inspection. The COT is merely inspecting the magazines and general cargo storage areas where LFORM/MLA products are stowed to assess overall material condition of the LFORM/MLA, cleanliness of the spaces, to ensure the materials are properly secured for sea, and to personally view accessibility constraints.

Annual Reporting Requirements

SLCP Validation Report

This report validates the current date of the SLCP, troop regulations, and any changes to these documents. It also ensures SLCP's conforms to guidelines in COMNAVSURFLANTINST 9010.2/COMNAVSURFPACINST 9010.1.

Normally, the PHIBGRU CCO will release a naval message during the first week of July each year reminding ships of the reporting requirement. This message will also identify a due date for the submission of the report and delineate the reporting format.

Once all of the ships' inputs have been received, the PHIBGRU CCO will consolidate the inputs and send a naval message to the standard SLCP distribution list informing commands of the results of the validation process. The timely submission of reports by individual ships is crucial to the timely dissemination of this information and in satisfying the Surface Forces, Pacific/Atlantic mandated requirement.

Ship's Load Plans

The LF is responsible for preparing and presenting detailed load plans each time LF elements are embarked aboard assigned shipping. Load plans for deployments or training exercises 13 days or less will consist of—

The load plan cover page signed/approved by both the COT and the ship's CO.

- Deck diagrams for each hold, level, and stowage location. This includes all vehicle or cargo stowage areas, flight deck, hangar deck, well deck, super-deck, and other LF designated or LF/ships common use spaces identified in the SLCP.
- Part I to the personnel supplies and equipment report to accurately identify the numbers of embarking personnel by unit/organization.
- Printed copies of the standard LF embarkation reports (unit personnel and tonnage table/cargo manifest/personnel supplies and equipment report, part II) provided to the ship upon request. At a minimum, the TEO should provide a logistics automated information system-generated electronic export (.pex) file containing the ship's data and load plans. This file will allow combat cargo personnel to generate additional ad hoc, query, and standard reports required to satisfy shipboard planning requirements.

Detailed ship's load plans for deployments or training exercises that are 14 days or longer will consist of—

- The load plan cover page signed/approved by both the COT and the ship's CO.
- A unit personnel and tonnage table report.
- Deck diagrams for each hold, level, and stowage location. Including all vehicle or cargo stowage areas, flight deck, hangar deck, well deck, superdeck, and other LF designated or LF/ships common use spaces identified in the SLCP.
- A ship's cargo manifest for each space having a deck diagram as well as any other space where LF equipment or supplies are planned for storage; this includes spaces having unit personnel and tonnage table line number 4 (troop stow cargo). Additional information relative to proper load plan development, preparation, and assembly can be found in JP 3-02.2.
- A logistics automated information system-generated electronic export (.pex) file containing the ship's data and load plans. This file will allow combat cargo personnel to generate additional

ad hoc, query, and standard reports required to satisfy shipboard planning requirements.

Load plans must be submitted to the ship's CO for review and approval no later than 13 days prior to the execution of loading. Distribution of the signed final load plans is the responsibility of the TEO. Combat cargo personnel should ensure that distribution includes COMNAVSURFPAC (N41)/LANT (N36), and COMPHIBGRU ONE/TWO (N36)/THREE (N513).

All load plan deck diagrams and standard LF embarkation reports (unit personnel and tonnage table/cargo manifest) will be prepared using currently fielded logistics automated information system.

Finally, the CCO must ensure that the detailed load plan includes ship's MHE/CHE, LFORM/MLA/EOD/ SPECWAR/shipfill and other munitions products stored in ships' magazines, aviation consolidated allowance list/individual material readiness list, and available ground support equipment that may be stored in LF spaces or on the flight/hangar deck.

APPENDIX H

WELL DECK COMBAT CARGO OPERATIONS

This appendix outlines cargo handling procedures and the cargo handling personnel qualifications for vehicle and well deck operations. All vehicle/well deck operations shall be conducted in accordance with JP 3-02.2. The success of embarkation and debarkation evolutions involving landing craft aboard a ship is dependent on close coordination between combat cargo personnel, the ship's deck department, and embarked LF elements.

CCO/CCA Duties and Responsibilities

The ship's CCO is responsible for the safe and orderly flow of all vehicles, cargo, and personnel in both operational and administrative phases of ship-board well deck operations. This includes mail and other miscellaneous cargo that arrives or departs via the well deck. The duties normally associated with this responsibility include the following:

- Compile a complete passenger manifest for all personnel arriving or departing in administrative or tactical status that includes at least the following information.

Note: Preparation of passenger manifests for tactical movements is the responsibility of the moving unit.

- Last name and middle initials.
- Rank/rate.
- Social Security number.
- Organization.
- Destination.
- Blood type.

- Conduct troop/passenger pre-embark briefings to include:
 - Well deck precautions.
 - Minutes to landing craft.
 - Personal survival equipment and its use.
 - Landing craft emergency egress stations.
- Conduct a foreign object damage (FOD) check to ensure that when passengers transit the vehicle/well deck, they do not create a potential hazard and are escorted by trained guides.
- Ensure passengers are provided with approved head/hearing protection and flotation devices from the landing craft they are to board. Eye protection should also be used, if required. All personal protective gear shall be properly worn by passengers prior to proceeding into the well deck except for the flotation device, which may be received on board the landing craft.
- Be familiar with load capacities/restrictions, survival equipment carried, and emergency escape procedures for each type of landing craft.
- Inspect cargo prior to loading to ensure it is unitized or palletized in accordance with existing instructions.

Required 1 Alpha Team/Ship's Platoon Training

Per current instructions and regulations, CCA or Deck Department personnel provide well deck qualification training. Once training checklist is completed and confirmed by the CCO and ship's boatswain, personnel are qualified for duty with 1 Alpha team/ship's platoon. The CCO will keep the completed checklist on file.

Embarking/Debarking Troops Via Landing Craft

Ship's 1 Alpha/ship's platoon personnel should use the following standard procedures when embarking/debarking troops, vehicles, and cargo via landing craft. All well deck embark/debark evolutions must be conducted in accordance with the appropriate surface assault planning documents contained in the landing plan.

Special Considerations

- Ensure a serviceability check of all communication circuits and equipment designated for the embarkation/debarkation control stations is completed (emission control [EMCON] permitting) prior to the commencement of each evolution.
- Set up embark/debark status boards in accordance with latest operational landing plans prior to commencement of evolution.
- Conduct a meeting with key well deck control and 1 Alpha team/ship's platoon personnel, prior to the commencement of any evolution, to ensure a complete understanding of the cooperation required to execute the landing plan.

Advance Planning and Preparation

- Establish liaison with troop representatives to coordinate onload/offload and advance/rear party requirements.
- Obtain and distribute the surface assault employment and assault landing table, and serial assignment table from the landing plan.
- Brief all 1 Alpha team/ship's platoon and appropriate deck department personnel on the upcoming evolution.
- Provide an embarkation/debarkation plan to all the departments and key embarked organizations that emphasizes:
 - Organization of ship for embarkation/debarkation evolution and individual duties of ship's personnel and supporting elements.
 - Chain of command and command relations between embarkation/debarkation control stations, vehicle decks, hangar bay, and well deck areas.
 - Embarkation/debarkation communication requirements to include emergency communication procedures in the event of a communication casualty.
- Conduct a brief for all concerned personnel that addresses, at a minimum:
 - General organization/composition of landing craft serials and the use of troop/passenger manifests.
 - Duties of the team leader for each embarking/debarking serial.
 - Adjustment of equipment (782 gear/individual or crew-served weapons and backpacked field radio).
 - Equipment stowage plan for hand/carry-on cargo organic to the unit and essential to the mission.
- Establish status boards at all embarkation/debarkation control stations (i.e., debark control, well deck control), which contains the following:
 - Serials.
 - Landing craft waves.
 - The actual craft number and serials embarked. (This is left blank until such time as the craft is actually loaded.)
 - Load information (i.e., number of troops, types of portable equipment, types of vehicles, and cargo, etc.).
 - Load time of serial (i.e., start and completion times).
 - Destination (i.e., name of craft landing zone or beach, etc.).

Note: It is important that the status boards reflect an accurate record and status of the actual serials aboard all landing craft at any given time during embarkation/debarkation evolution.

Safety

- Standard safety precautions are followed in applicable ship's regulations.

- 1Alpha/troop guides obtain authorization from the ramp marshal before moving to or from any landing craft.
- Troop guides and landing serials proceed in a safe and orderly manner.
- Prescribed procedures and precautions are followed.
- All embarking/debarking troops are checked for FOD hazards.

Embarking Procedures

- At all times for maximum safety, two 1A/troop guides will escort assault troops. There should be a 1Alpha/troop guide leading the serial with another 1Alpha/troop guide acting as trail man. The LF serial will proceed single file whether embarking or debarking, directly to or from the landing craft.
- On orders from the ramp marshal, with authorization from the CCO, the lead 1Alpha/troop guide along with the trail 1Alpha/troop guide, will approach the landing craft that has been designated for the load or requires unloading. Once on the ramp that leads to the well deck, the lead 1Alpha/troop guide will signal the loadmaster to ensure that the landing craft is ready to proceed with the load/unload.
- Once in the marshalling area and under the guidance of the 1 Alpha supervisor, well deck CCA, and the ship's weapons/ordnance officer, the senior troop representative will be directed to collect all unexpended ammunition. Troop leaders will follow standard procedures to ensure that all weapons are cleared, inspected, and locked in a safe manner.
- Collected ammunition will be boxed, unitized or palletized, and sealed. Markings or placards with the essential information of DOD information code (DODIC)/NALC, quantities, and owning unit will be affixed to each container.
- All collected ammunition will be properly stowed in designated ship's magazines as directed by the CCO.

The LF must provide the CCO with three copies of an accurate manifest of all personnel that

embark or debark a landing craft. This manifest should be provided 24-hours in advance of the scheduled movement. When debarking the ship via landing craft, the manifest will be validated against the names of the personnel actually present with last minute changes properly annotated. For those personnel returning to the ship, the senior troop representative should have a manifest ready to present to ship's 1 Alpha personnel upon debarking the craft. In those instances when a manifest is not available from returning LF personnel, an accurate written muster will be taken by a designated troop representative at the marshalling area prior to dismissal. The muster report will be passed to well deck CCA in well deck control. This manifest will be copied and sent to the administrative officer with the original retained on file until the operation is over.

Debarking Procedures

- Ship will set condition 1 Alpha.
- Debark control will call away assigned landing serials 15 minutes prior to the serial being required to proceed to their designated marshalling area. An example of the initial announcement from debark control is: **“SERIAL(S) 1001, 1002, 1003 AND 1004 LAY TO YOUR BERTHING AREAS AND PREPARE FOR SURFACE DEBARKATION.”**

This ensures that all personnel assigned to the serial(s) are ready to move with all their equipment to the marshalling area when called. Again, they will have approximately 15 minutes to assemble their equipment and weapons and be ready to move when they will hear the next announcement from debark control: **“SERIALS 1001, 1002, 1003, AND 1004 LAY TO THE FORWARD PART OF THE HANGAR BAY FOR SURFACE DEBARKATION.”**

Once in the designated marshalling area, combat cargo personnel will:

- Verify the troop/passenger manifest.
- Conduct the required safety briefs and check for FOD.

- Maintain positive control of assault troops by landing serial.
- Maintain positive communications between the marshalling area, debark control, well deck debark control, and the upper vehicle hold (this may be done via a situational awareness beacon with reply or hand-held radio system.)

On order from the well deck CCA, via the 1 Alpha marshalling area supervisor, two troop guides per landing serial will lead the assault troops in a single file to the landing craft. The 1 Alpha troop guide at the lead of the landing serial will be equipped with a man-on-the-move or like radio system and is responsible for obtaining authorization from the ramp marshal prior to approaching the landing craft. The other troop guide will follow the last member of the landing serial and ensure there are no stragglers and that dropped equipment is picked up. Upon completion of embarking the landing serial, the lead troop guide will signal the well deck CCA that the serial has been loaded. Once the ramp is raised, the guides will depart the well deck area.

Debarcation information regarding number of troops embarked and landing serial number will be passed via the sound powered phones to debark control by the well deck CCA. The well deck CCA records all required information and provides a hard copy of the passenger/troop manifest as soon as possible to the troop guides.

Planning and Preparations Checklist

- Complete all status boards with information required.
- Review ships 1 Alpha bill and ensure all personnel are trained as required.
- Review requirements for ship's platoon personnel and ensure that no further training requirements exist.
- Review 1 Alpha station manning requirements.
- Ensure all life preservers are checked for serviceability.
- Conduct a communication test of all installed and portable communications equipment.
- Identify and source additional communications equipment that may be required.
- Check routes to the well deck and ensure they are clear.
- Have all 1 Alpha personnel muster in advance to ensure they are properly equipped and prepared to execute their duties.
- Conduct briefs and issue any written instructions that may be required.

The following must be used and properly maintained during each embark/debark evolution:

- Embarkation/debarkation records that must be retained for future use.
- Status boards.
- Serial assignment table.
- Employment assault and landing tables.

Landing Craft Loading and Unloading

Standardized procedures for ship's combat cargo personnel and 1 Alpha team members for loading and unloading landing craft cargo under real or simulated combat conditions are required to support safe operations. These standardized procedures will ensure continuity of effort, streamline the development of shipboard training packages, and facilitate LF shipboard integration.

Special Considerations

Prior to the commencement of each evolution, the CCO should ensure that each of the following considerations are addressed:

- Ensure a serviceability check of all communication circuits and equipment designated for use by the embarkation/debarkation control stations (EMCON permitting).
- Set up the embark/debark status boards in accordance with latest operational plans.
- Conduct a meeting with key well deck control and 1 Alpha team personnel to ensure all personnel have a complete understanding of the cooperation required to execute the landing plan.

- Identify, prioritize, and pre-stage vehicles and cargo if staging areas are available.
- Check the serviceability and availability of all CHE/MHE, ramps, elevators, etc., required to support onload/offload operations.

Planning and Preparations

- Obtain and distribute landing craft employment assault and landing table and serial assignment table.
- Highlight all cargo, equipment, and vehicles scheduled for movement by surface craft.
- Brief all cognizant personnel on cargo handling procedures and load plans.
- Ensure required equipment is readily available for cargo loading.
- Complete all preparations for well deck operations in accordance with the ship's instructions.
- Brief all cognizant personnel as to onload/offload plan and load schedule. Include LCAC and landing craft, and utility (LCU) craftmasters in these discussions so that anticipated craft load plans can be reviewed.

Safety

- All standard well deck and vehicle/cargo handling safety precautions and operating procedures are observed during each evolution.
- All vehicle deck 1 Alpha/ship's platoon and well deck personnel exercise due caution when an LCAC has engaged main engines.
- All 1 Alpha/ship's platoon personnel are proactive in identifying potential FOD hazards.

Procedures

The CCO and ship's first lieutenant will determine the best well deck location for recovering, loading/unloading, and launching assigned landing craft assets. This determination is made after considering spot availability, onload/offload requirements, safety, craft refueling

requirements, and potential impacts staging of vehicles, and other shipboard evolutions.

Load and unload unitized/palletized cargo, equipment, and vehicles into and from assigned landing craft in accordance with briefed procedures.

Conduct 1 Alpha and well deck operations in accordance with latest operational plans and appropriate debark control agencies.

Record cargo carried by each landing craft by craft number, destination, time of arrival, and time of departure (to be accomplished by status board keepers in debark control and well deck control.) This same information must be passed by the well deck CCA to the CCO in debark control to facilitate the proper command and control of shipboard 1 Alpha operations.

For loading, the well deck CCA will ensure that the craftmaster agrees that the weight and arrangement of each load is within the prescribed safety limits given craft configuration, sea states, distance to the beach, and ambient temperatures.

For unloading, the well deck CCA will coordinate the safe and efficient flow of vehicles, cargo, and personnel to the appropriate vehicle and cargo stowage locations and/or to the hangar deck.

In those instances where hazardous materials or munitions products require movement to or from a landing craft, the CCO will coordinate with the weapons/ordnance officer and appropriate department heads to facilitate the proper handling, receipt, and storage of these items.

All vehicles and CHE/MHE will be guided to and from landing craft through the use of traffic directors equipped with traffic wands and whistles. Once directed by debark control, via well deck debark, to commence loading/offloading, the ramp marshal, well deck CCA, and designated safety observers will monitor all such movements to ensure they are conducted in an orderly and safe manner.

Specific and detailed guidance relative to well deck operations and landing craft loading and unloading may be found in the *Wet Well Operations Manual* and *Safe Engineering and Operations (SEAOPS) Manual* for conventional and air cushioned landing craft, respectively.

Planning and Preparation Checklist

- Advance preparations are complete.
- Briefings for 1 Alpha personnel are complete.
- 1 Alpha is set properly and required personnel/equipment are on station.
- All unnecessary personnel are cleared from vehicle decks and well deck.
- 1 Alpha/ship's platoon personnel are properly equipped.
- Arrangements have been made for loading/unloading cargo/vehicle and personnel according to assigned priorities.
- All 1 Alpha/ship's platoon personnel are familiar with their duties.
- All obstructions are removed from cargo/vehicle/personnel routes to and from the vehicle deck and well deck.
- All loads are properly spotted on the vehicle decks.
- Facilities are available for emergency repair to wheeled vehicles and MHE/CHE.

Execution

- Operations are conducted in accordance with current regulations.
- Effective communications are maintained with all stations.
- All serial movements are coordinated with debark control coordinates.
- Well deck CCA is aware of all cargo/vehicle/personnel movement operations.
- All serials are handled smartly and expeditiously.
- All vehicles are handled properly and safely.
- All internal loads are handled properly and safely.

- Proper cargo records and status boards are maintained.
- The personnel, cargo, vehicle, and estimated time of completion report is accurate and submitted in accordance with the PCS intentions message.

Receiving and Handling Casualties

The CCO is not specifically responsible for the shipboard planning and execution when receiving and processing casualties. This duty is normally assigned to the ship's medical officer. However, the CCO does play a major role given the overall responsibility to the CO for loading and offloading all personnel, supplies, and equipment. The purpose of this section is to highlight some of the considerations, planning, and preparations that must be addressed relative to receiving casualties via the well deck. Each CCO must be familiar with the ship's mass casualty bill for a definitive list of assigned tasks, duties, and responsibilities.

Special Considerations

- Check the serviceability of all communication circuits and equipment designated for use by embark/debark control stations (EMCOM permitting) prior to commencement of evolution.
- Set up embark status board in accordance with latest operational plans prior to commencement of evolution.
- Provide functional area briefs to key well deck control personnel and 1 Alpha/ship's platoon personnel, medical personnel, stretcher-bearers, and master-at-arms or troop guards.
- Ensure the ship's morgue freezers are on and operational. (Coordination with the ship's medical department is required.)

Planning and Preparation

- Instruct all stretcher-bearers on correct method of transporting casualties to medical triage/battle dressing stations.

- Ensure routes from medical triage area/battle dressing station to sick bay are cleared of all obstacles.
- Verify the location of the master-at-arms/troop guard station and the medical triage/battle dressing station area. Personnel manning this station will receive, label, search, and secure ammunition and weapons from the casualties.
- Ensure medical department has been provided a list of names, by blood type, for all embarked LF and NSE personnel.
- Provide instructions for debark control, well deck debark, well deck control, and well deck personnel (including the ramp marshal, station phone talker, 1 Alpha/ship's platoon personnel, stretcher-bearers, medical corpsmen, and master-at-arms/troop guards), emphasizing:
 - Ship's organization for embarking/receiving casualties and individual duties for key personnel.
 - Safety procedures and special hand signals for requesting stretcher-bearers to the landing craft.
 - Embark/debark communications via 3MC/5MC/10MC/1MC and sound power phone procedures in the event of communication casualty.

Safety

- All standard safety precautions are followed.
- 1 Alpha/ship's platoon personnel, medical corpsmen, and stretcher-bearers obtain authorization from the ramp marshal before moving into the vehicle deck when an LCAC has main engines engaged.
- FOD hazards are removed from the casualties prior to their movement.

Procedures

- Conduct well operations in accordance with applicable regulations.

- When ship receives information on an inbound CASEVAC, the medical/stretcher bearer teams should be called away via the ship's general announcing system and readied.
- Well deck control should direct the landing craft to the forward-most landing craft spot.

Upon arrival of the landing craft, medical personnel should process and handle casualties as follows:

- Once the CASEVAC landing craft is on spot, 1 Alpha personnel/ship's platoon stretcher-bearers and corpsmen, with authorization from the ramp marshal, will proceed to the landing craft. The corpsman will conduct triage on the landing craft, if required. All wounded troops capable of walking and who require escort service will be escorted to a designated location as quickly as possible. At this point, all remaining casualties will be considered stretcher cases and stretcher-bearer teams will move them on command from the corpsman to the designated triage area and/or medical spaces.
- At the medical triage area, medical personnel will provide further medical triage/assistance to the casualties.
- The ship's master-at-arms/troop guards will check for ammunition and remove and secure weapons from the casualties. A tag or label is affixed to the stock of the weapons taken into custody, with the following information available from the wounded troop's medical tag:
 - Rank.
 - Initials and last name.
 - Branch of service.
 - Last four digits of Social Security number.
 - Unit.
- Collected ammunition will be inventoried, boxed, unitized or palletized and sealed. Markings or placards with the essential information of DODIC/NALC and quantities and owning unit will be affixed to the exterior of each box. Ammunition will be secured in either magazines or jettisonable lockers.

- Collected weapons will be secured in an armory.
- Casualties will be transferred to sickbay or other locations as directed by medical personnel.

Planning and Preparation Checklist

- Medical supplies and personnel are on-station and prepared to receive casualties.
- Communication circuits have been tested and are functioning.
- Stretcher-bearers have mustered on station in proper gear and are familiar with their routes.
- The well deck and routes to medical triage/sickbay have been cleared of all obstacles.

Execution

- Prescribed procedures are followed.
- Casualties are handled expeditiously and efficiently.
- Casualties are properly secured and protected from elements while being transported.

Loading/Unloading Passengers, Mail, and Cargo

This section establishes standardized procedures for the ship's 1 Alpha/ship's platoon organization when conducting passengers, mail, and cargo (PMC) operations via landing craft. PMC is an administrative evolution; as such, the CCO is required to manage surface PMC requirements since they involve the movement of cargo, vehicles or personnel via the well deck.

Special Considerations

- Coordinate with ship's XO, SupO (material control officer), CHENG, admin officer, postal officer, and embarked organizations (i.e., troop/LF operations center, staff, etc.) 24 hours in advance, for outgoing PMC information and materials.

- Arrange for shipboard working party to consolidate and pre-stage mail and cargo, if necessary.
- Prepare to handle PMC between ships in company, if deployed.

Planning and Preparation

- Establish liaison with ship's department heads and embarked organizations for PMC evolution at least 24 hours in advance.
- Obtain authorized outbound passenger list from ship's XO.
- Monitor daily plan and make liaison with the ship's first lieutenant for update on all well deck operations, particularly inbound and outbound schedules.
- Conduct briefings with all personnel to be involved in the evolution, especially 1 Alpha team/ship's platoon personnel.
- Arrange and designate an administrative muster area for passengers (i.e., hangar, triage area, mess deck, etc.).
- Disseminate required muster time to outbound passengers.
- Arrange for a staging area and working party to pre-stage mail and cargo, if necessary.
- Establish inbound passenger control station for shipboard security check for personnel verification, muster, and reporting purposes.

When conducting PMC operations via surface craft, the ship's XO is the approval authority given the additional duty as the ship's debark control officer. The ship's XO performs the same mission as the TACRON and the air planning board when developing the air tasking order for PMC requiring movement via rotary wing aircraft.

Safety

- All standard safety precautions are met.
- All 1 Alpha personnel obtain authorization from the ramp marshal before proceeding to and from any landing craft.

- All FOD hazards are removed from cargo and personnel prior to their loading/unloading from any landing craft.

Loading Procedures

- Conduct safety brief for all outbound passengers.
- Ensure the 1 Alpha/ship's platoon personnel check passengers/cargo for FOD.
- Distribute passenger manifest in accordance with shipboard instructions and existing standing operating procedures (SOPs).
- Prioritize all outbound surface PMC requirements in accordance with the ship's XO's instructions.
- Ensure all outgoing mail and cargo is properly bagged, boxed, unitized or palletized. Proper address, labels, markings or placards should be firmly affixed to mail and cargo.
- Ensure load will be within load limits of landing craft.
- Direct 1 Alpha/ship's platoon MHE operators to load unitized and palletized cargo.

Unloading Procedures

- Assign 1 Alpha/ship's platoon personnel to lead troops/passengers to the designated inbound passenger control station and conduct the necessary security checks and any required administrative processing, for maximum safety. Normally, the ship's master-at-arms force will conduct the security checks.
- Direct 1 Alpha/ship's platoon personnel to off-load any loose, bulk cargo items that may be hand-carried.
- Direct 1 Alpha/ship's platoon MHE operators to off-load unitized/palletized cargo.
- Coordinate with appropriate shipboard organizations to pick up incoming mail and cargo from its designated staging area. 1 Alpha/ship's platoon personnel do not deliver mail and cargo.

Planning and Preparation Checklist

- Advance preparation is complete.
- All stations are promptly and adequately manned.
- All personnel have the proper safety gear.
- Communications are adequate and tested prior to evolution (EMCON permitting).
- Routes to the well deck are clearly understood by all personnel.
- 1 Alpha/ship's platoon personnel are equipped with properly colored safety gear.
- Safety and other required briefings are conducted.

Execution

- Prescribed procedures are followed.
- Communications are satisfactorily tested (EMCON permitting).
- The following are used and properly maintained:
 - Passenger manifest/muster record.
 - Status boards.
- Troops/passengers proceeded in a safe and orderly manner.

Noncombatant Evacuation Operations

Operationally engaged maritime forces have routinely conducted NEOs. The special and unique nature of this type of operation and its potential impact on well deck operations cannot be over-emphasized. Although this appendix does not specifically address the NEO, it is imperative that each CCO review the ship's NEO bill. Fleet regulations require each amphibious ship to develop a NEO bill and to exercise given the wide variance in shipboard NEO procedures, each ship's instruction differs with regard to the tasks, duties, and responsibilities of assigned personnel.

APPENDIX I

FLIGHT DECK COMBAT CARGO OPERATIONS

This appendix outlines cargo handling procedures and the cargo handling personnel qualifications for flight deck operations on amphibious ships. All flight deck operations and training shall be conducted in accordance with the appropriate naval air training and operating procedures standardization manual, and the ship-specific air department SOPs. This appendix provides a generic overview of combat cargo operations and the conduct/requirements for personnel assigned to “Condition 1A” on the flight deck. The procedures also apply to personnel who augment or support flight deck cargo handling operations.

CCO/CCA Responsibilities and Duties

The ship’s combat cargo personnel are responsible for the safe and orderly flow of troops, supplies, and equipment—to include passengers, mail, cargo (PMC)—to and from aircraft. This includes both operational and administrative phases of shipboard flight deck operations. The following paragraphs present some specific duties.

Passenger Manifesting

Manifesting will be completed for all personnel arriving or departing in an administrative or tactical status. The CCO is responsible for generating the manifest for all administrative movements to include PMC flights. The LF is responsible for preparing manifests for all tactical movements and delivering them to the CCO at least 12 hours prior to the scheduled aircraft launch time. Each manifest should include the following minimum information:

- Last name and middle initial(s).
- Rank/rate.

- Social Security number.
- Organization.
- Destination.
- Blood type.

Troop/Passenger Pre-flight Briefings

- Flight deck precautions.
- Primary and alternate routes to helicopters.
- Personal survival equipment and its use.
- Helicopter ditching and emergency egress stations.

FOD Checks

Conduct a FOD check to ensure that all personnel, supplies, equipment and PMC being moved on the flight deck does not endanger shipboard flight deck operations by creating a FOD hazard. Additionally, combat cargo personnel are responsible for ensuring only trained guides are used during the execution of such movements.

Protective Gear

For administrative movements, passengers should be provided with approved head/hearing protection and floatation devices from the aircraft they are to board. Eye protection should be provided, if available. All personal protective gear shall be properly donned by passengers prior to proceeding onto the flight deck.

Aircraft Familiarization

Be familiar with load capacities/restrictions, aircraft survival equipment, and emergency escape procedures for each aircraft model expected on board for logistics purposes.

Inspection

Cargo and vehicles are inspected prior to loading to ensure they are prepared for air movement in accordance with existing instructions.

Performance Qualification Standards Requirements

All personnel assigned to the flight deck cargo/troop/vehicle section of the ship's condition 1 Alpha A bill should be trained in accordance with the flight deck familiarization performance qualification standards and the appropriate aviation references. The prerequisite to all other 1 Alpha/ship's platoon training should be Naval Education and Training Performance Qualification Standards Management Guide 43426-0, *Flight Deck Familiarization*.

Upon completion of the performance qualification standards, all 1 Alpha/ship's platoon/ship's platoon personnel must receive further instruction from the CCO specific to cargo handling. All training should be recorded and maintained by the individual's department and the CCO. Additionally, combat cargo must be aware of individual qualifications for personnel assigned to the flight deck 1 Alpha/ship's platoon team. These qualifications include—

- Aircraft fire fighting.
- Basic damage control.
- Ordnance handling certifications.
- Pallet conveyor/elevator operator licensing (to include requirements for handling munitions products).
- Forklift operator licensing (to include requirements for handling munitions products).

Embarking and Debarking Troops Via Helicopter

The use of standardized procedures by the ship's flight deck organization is considered a safety imperative given the risks associated with ship-board flight deck operations. The following procedures are provided as a baseline for conducting combat cargo operations on the flight deck. It is important to note that all flight deck tactical embark/debark evolutions are conducted in accordance with the HEALT, heliteam wave and serial assignment table (HSWAT), the serial assignment table and LF documents sourced from the landing plan.

Special Considerations

Prior to the commencement of each evolution—

- Conduct a serviceability/operational check of all communications circuits and equipment designated for use by the embark/debark control stations (EMCON permitting).
- Set up embark/debark status boards in accordance with the latest operational plans.
- Brief with the key flight deck control personnel and 1 Alpha/ship's platoon troop guides.
- Conduct required serviceability/operational checks of personal floatation devices in accordance with appropriate maintenance repair card.

Advanced Planning and Preparation

- Liaison with troop representatives to coordinate onload/offload and advance/rear party requirements.
- Obtain and distribute the HEALT, HWSAT, and serial assignment table.

- Brief the ship's 1 Alpha bill and LF augments from the ship's platoon.
- Provide an embark/debark plan to all of the ship's departments and key embarked organizations that emphasizes—
 - Organization of the ship for embark/debark and a brief list of individual duties of the key personnel involved.
 - Chain of command and relations between embark/debark control stations and the assembly areas.
 - Embark/debark communications to be used and the plan for communicating in the event of an equipment casualty.
- Conduct a brief for concerned personnel that outlines, at a minimum, the following topics:
 - General organization/composition of helicopter serials and the use of the troop/passenger manifest.
 - Duties of the helicopter team leader for each embarking/debarking heliteam.
 - Adjustment of equipment (782 gear/individual or crew-served weapons and backpack field radios).
 - Equipment stowage plan for hand/carry-on cargo, organic to the unit, that is essential to the mission.
- Fill-in all required information on the appropriate status boards in embark/debark control stations (e.g., debark control, flight deck debark). These status boards should contain the following basic information:
 - Troop serials.
 - Helicopter waves.
 - Actual side number of helicopter and the corresponding serial embarked. (This is left blank until the aircraft is actually loaded.)
 - Load information (e.g., number of troops, weight, type of portable equipment, etc.).
 - Load time of serial.
 - Destination (name of LZ, airfield, ship, etc.).

Safety

- Observe standard flight deck safety precautions as required by naval air training and operating procedures standardization manuals and ship's regulations.
- Ensure that 1 Alpha/ship's platoon troop guides obtain authorization from the landing signal enlisted (LSE) before moving to or away from helicopters with engaged rotors.
- Ensure all embarking/debarking personnel, supplies, and equipment are checked for FOD hazards prior to their movement onto the flight deck.

Embarking Procedures

Embarking troops on helicopters should be accomplished in the following manner:

- Two 1 Alpha/ship's platoon troop guides will escort one helicopter team of assault troops at all times to maximize safety. The 1 Alpha/ship's platoon lead troop guide should have radio communications with flight deck debark (on larger LHD/LHA ships) or with primary flight control (on smaller LPD/LSD/LST ships). The second 1 Alpha/ship's platoon troop guide will perform duties as the trail man for each load helicopter team. The helicopter team must always proceed in single file whether embarking or debarking an aircraft. It is the responsibility of the 1 Alpha/ship's platoon troop guides to ensure that this occurs.
- On orders from the CCO/CCA and with authorization from the LSE, the lead and trail 1 Alpha/ship's platoon troop guides approach an aircraft that requires unloading. The lead guide will signal the LSE to have the pilot lower the aircraft ramp. Once the ramp is down, the lead guide then signals the troops/passengers inside the aircraft to follow in a single file to the rear of the aircraft.

- Once the passengers begin to deplane, the lead troop guide signals the LSE and requests permission to depart the spot. Once permission has been received, the lead guide signals the troops to follow him off the spot. The trail guide remains until the last passenger has deplaned and falls in behind the last person. The trail guide signals the LSE that unloading is complete. Upon clearing the aircraft of all guides and passengers, the LSE then signals the pilot to raise the aircraft ramp.
- In the assembly area, the senior troop representative will have any unexpended munitions products turned in and ensure all weapons are cleared, inspected, and locked in a safe manner.
- Collected munitions products will be boxed, unitized or palletized and sealed. Markings or placards with the essential information of DODIC/NALC, quantities, and owning unit will be affixed. Ship's personnel (aviation ordnance men or gunner's mates) and LF ammunition technicians should be present during this collection, packaging, and marking process. All collected munitions will be stored in appropriate magazines in accordance with applicable directives/instructions.
- A muster will be taken by the senior troop representative at the assembly area prior to dismissing personnel. The muster report should be passed to the flight deck combat cargo personnel where it will be retained on file.
- Debark control will call away assigned landing serials to report to their designated assembly area. An example of the initial announcement from debark control is: **“SERIAL(S) 1001, 1002, 1003 AND 1004 LAY TO YOUR BERTHING AREAS AND PREPARE FOR AIR DEBARKATION.”** This ensures that all personnel assigned to the serial(s) are ready to move with all their equipment to the assembly area when called. **“SERIALS 1001, 1002, 1003, AND 1004 LAY TO THE FORWARD PART OF THE HANGAR BAY FOR AIR DEBARKATION.”** Once in the designated assembly area, combat cargo personnel will—
 - Verify the troop/passenger manifest (three copies).
 - Conduct the required aircraft and flight deck safety briefs.
 - Conduct a FOD inspection.
 - Maintain positive control of assault troops by landing serial.
 - Maintain positive communications between the marshalling area, debark control, and flight deck debark control.

Once these steps are complete, combat cargo personnel should ensure that personnel assigned to the serials remain in the assembly area grouped by landing serial and in a single file ready for debarkation.

Positive communications between the assembly area, debarkation control, flight deck debark and primary flight control must be maintained at all times. The timely reporting of landing serial readiness is of critical importance during debarkation. The recommended reporting structure, as shown in figure I-1, has the assembly area reporting to debarkation control via flight deck debark when serials are assembled and ready to debark the ship. Debark control informs primary flight control on the status of landing serials. When primary flight control is ready for the troops/passengers to embark awaiting aircraft, they inform debarkation control, who directs flight deck debark and the assembly area to execute the movement.

Debarkation Procedures

The debarkation of troops via aircraft should be accomplished as follows:

- The ship should set Condition 1 Alpha for flight deck operations if all 1 Alpha/ship's platoon team personnel (forklift/elevator operators, etc.) are required to effect the timely and safe offload of LF personnel. At a minimum, the ship will set flight quarters and man all flight quarters' stations. Normally the setting of flight quarters alone only provides air department manning.

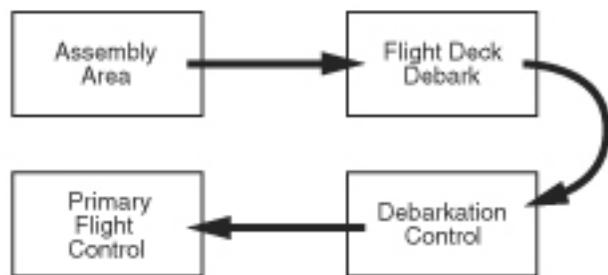


Figure I-1. Recommended Reporting Structure.

On order from flight deck, debark; two troop guides lead each of the landing serials via predetermined routes from the marshaling area to the flight deck. Once the lead troop guide arrives on the flight deck, the lead troop guide is responsible for obtaining permission to approach the aircraft from the LSE. This permission must be obtained prior to the troop guide crossing the foul line. The trail troop guide follows the last member of the serial and ensures that the troops/passengers do not drop equipment on the flight deck.

Additionally, the lead troop guide assists stragglers if required. After loading a serial on an aircraft, the lead troop guide will signal the LSE that loading is complete and that the ramp is cleared and ready to be raised. Once all personnel and their cargo/equipment are loaded on the aircraft, both troop guides obtain authorization from the LSE to depart the aircraft spot.

Debarkation information regarding the number of troops debarked and their associated landings serial number will be passed to debarkation control via flight deck debarks. Both debark control and flight deck debark will record this information on the appropriate status boards as required. Flight deck debark will receive and retain copies of all manifests.

Advance Preparations Checklist

- Fill-in status boards with required information, as required.

- Review ship’s 1 Alpha bill and ensure all personnel are trained as required.
- Review requirements for ship’s platoon personnel and ensure that training is complete.
- Review and identify those debarkation stations that must be manned to support embark/debark requirements.
- Ensure all life preservers are checked for serviceability.
- Conduct a test of communications equipment required to support the evolution.
- Identify and source additional communications equipment that may be required.
- Check passenger movement routes to the flight deck and ensure they are clear.
- Have all 1 Alpha/ship’s platoon personnel assemble and conduct an inspection of their flight deck and personal safety equipment.
- Conduct detailed onload/offload briefs and review/issue instructions, if required.
- Conduct a flight deck safety brief for all 1 Alpha/ship’s platoon personnel.
- Validate/verify the aircraft spotting plan with flight deck control and ensure any changes are annotated on the HWSAT and appropriate status boards. Flight deck combat cargo personnel should also notify debark control of any changes to the aircraft spotting plan.

Execution Checklist

- Conduct operations in accordance with current regulations.
- Maintain effective communications with all stations.
- Ensure flight deck CCA is aware of all cargo/vehicle/personnel movement operations.
- Forward pertinent personnel, cargo, vehicle, and estimated time of completion data to debark control when requested.
- Ensure troop guides and landing serials proceed in a safe and orderly manner.
- Accurately maintain all records and status boards. It is recommended that combat cargo personnel develop some electronic means of

documenting this information for analysis and historical reference after the evolutions are completed. The following embark/debark records must be maintained during every evolution:

- Flight deck status boards and logbooks.
- Serial assignment table (to include annotations relative to changes, additions or deletions).
- HEALT and HWSAT (to include annotations relative to changes, additions or deletions).

Helicopter and Aircraft Cargo Loading and Unloading

This section provides an overview of standardized procedures when loading and unloading cargo from helicopters/aircraft under real or simulated combat conditions.

Special Considerations

Prior to the commencement of any evolution, ensure that the following actions are complete:

- Check the serviceability of all communications circuits and equipment designated for use at debarkation control stations (EMCON permitting).
- Set up embark/debark status boards in accordance with the latest operational plans.
- Conduct briefings for key flight deck control personnel and 1 Alpha/ship's platoon troop guides and cargo handlers, to include ship's personnel and any LF augments (ship's platoon).
- Identify, prioritize, pre-net, pre-sling, and pre-stage cargo for internal/external lift in designated staging areas (space permitting).
- Coordinate with the appropriate ship's department heads for serviceability and functional checks of all shipboard material handling equipment, ramps, elevators, pallet conveyors, transfer tables, etc., which will be used to

support/execute cargo offload and onload operations.

- Position adequate quantities and types of MHE/CHE in shipboard locations so as to fully support the expeditious loading/unloading and safe handling of all cargo items.

Planning and Preparations

- Obtain and distribute the HEALT, HWSAT, and serial assignment table highlighting all cargo, equipment, and vehicles designated for offload/onload via helicopter lift.
- Brief cognizant personnel on cargo handling procedures and load plans.
- Ensure required equipment, slings, and nets are readily available to support both internal and external cargo loading/offloading.
- Complete all preparations for flight operations in accordance with ship's instructions.
- Brief personnel on the contents of the flight plan, HWSAT/HEALT, and loading schedules and ensure that proper coordination occurs between the various LF elements and the ship's air department.

Safety

- Ensure all standard flight deck and cargo handling safety precautions and operating procedures are observed during each evolution.
- Ensure cargo handling personnel exercise caution when moving in/around helicopters/aircraft with engaged rotors.
- Ensure cargo handling personnel are proactive in their efforts to prevent FOD hazards on the flight deck.

Internal Cargo Loading and Unloading Procedures

- Coordinate with the flight deck officer and aircraft handling officer to determine the best spot for loading/unloading and launching helicopters/aircraft on the flight deck.

- Load/unload unitized or palletized cargo, equipment, and vehicles into and from assigned helicopters in accordance with briefed procedures contained in naval warfare publication (NWP) 3-04.1M, *Shipboard Helo Operating Procedures*, and the appropriate *Naval Air Training and Operating Procedures Standardization (NATOPS)* manual.
- Conduct flight operations in accordance with the latest operational plans and appropriate air operations control agencies. Issues or questions that will arise should be channeled to debark control for resolution since they are constant communication with TACLOG, flag plot, the LF operations center, and primary flight control.
- Ensure status board keepers in debark control and flight deck debark record the cargo, supplies, and equipment loaded and unloaded from each helicopter/aircraft on their respective status boards. This information should include the aircraft “side” number, destination, time of departure, and a list of the cargo supplies, and equipment loaded/unloaded.
- Ensure that the weight of each load is within safe limits and does not exceed the capabilities of the helicopters/aircraft employed for an operation. Through advance coordination with the aircraft squadron, the CCO will be able to determine weight limitations for each type/model/series of aircraft since ambient temperature, altitude, distance, and other factors affect this weight.

When offloading cargo, supplies, and equipment, flight deck combat cargo personnel are responsible for coordinating the safe, efficient, and orderly movement of offloaded items from the helicopter to their ultimate stowage locations. This requires the CCO/CCA to orchestrate the movement of 1 Alpha/ship’s platoon troop guides, cargo handlers, cargo handling equipment, and other flight deck personnel as they receive and process offloaded cargo items. It is imperative that detailed and accurate data is captured on all cargo, supplies, and equipment once it is offloaded.

External Loading and Unloading Procedures

- When preparing external loads, ensure a well-indoctrinated external loading/unloading team, under the supervision of the CCO/CCA, is available on the flight deck. If embarked, a Marine helicopter support team should be used. The LF should provide helicopter support team support whenever possible.
- Flight deck combat cargo personnel are responsible for ensuring that external loads are properly rigged. A total of three personnel are required on the helicopter/aircraft spot to make the hook-up; the hook-up man with a set of electricians rubber gloves, a probe man wearing leather gloves over rubber gloves and equipped with a static discharge probe, and a qualified LSE. Once the load is lifted, combat cargo personnel must ensure that the static discharge probe is removed from the deck and that the personnel assist each other in clearing the spot while moving to the designated safety area. Only after the probe and hook-up men are clear of the spot will the LSE signal the helicopter to depart the deck.
- Connecting the probe to the deck is accomplished using the clip connected to the grounding wire of the probe. It must be securely fastened to the deck to obtain a proper ground. This is normally accomplished by attaching the clip to one of the cloverleaf tie down points in close proximity to the load being lifted.
- Once the LSE brings the helicopter into a hover over the load, the probe man grounds the aircraft hook by catching it with the probe and maintaining positive contact until the hook-up man places the cargo pendant or net over the hook. The potential for serious or grave injuries exist if the probe man loses contact with the hook. This is due to the helicopters ability to generate significant static electricity.
- Expediently remove the probe clip from the cloverleaf securing point. If the probe man experiences difficulty in removing the clip, the LSE must ensure that the helicopter remains in a stable hover until all personnel are clear.

- Each member of the flight deck combat cargo team must wear approved flight deck safety equipment. Flight deck safety equipment includes steel-toed boots, cranial, goggles, jersey, and life vest. The appropriate color for the flight deck jersey, cranial, and life vest is white for combat cargo personnel.
- Cargo that is being prepared for external lift must be free of FOD and netted in a cargo net capable of supporting the weight of the cargo to be moved. The netting and preparation of the cargo may occur on the helicopter spot from which it will ultimately be lifted or prepared in advance, staged, and then moved via forklift to the designated aircraft spot. The operational tempo and LF requirements will determine which method is used.
- When preparing to execute the external lift of vehicles, howitzers and equipment, it may be rigged with helicopter support team slings either on the spot from which it will be lifted or rigged in the staging area. Once moved to the flight deck spot for actual lift, a recommended maximum of five personnel should be used to execute the lift. These five personnel consist of the hook-up man with a set of electrician's rubber gloves, a probe man wearing leather gloves over rubber gloves and equipped with a static discharge probe, a qualified LSE, and two crewmen to handle the legs of the helicopter support team slings.
- It is important that the helicopter support team sling remains straight and is prevented from wrapping around or getting caught on anything that might prohibit the safe lifting of the load. Once the load is lifted to the point where the helicopter support team slings are taut, ensure the static discharge probe is removed from the deck, and that the combat cargo personnel egress the area, in teams, to a designated safe area. After all team members have safely cleared the area, the LSE may launch the helicopter. Under no circumstances should the LSE direct the helicopter to lift the load while the load team is still under or near the load.
- During vertical replenishment (VERTREP) operations, combat cargo personnel are responsible for ensuring that the ship's 1 Alpha/ship's platoon guides and cargo handlers are readily available on the flight deck. These personnel will be required to rig external VERTREP loads and to execute the actual hook-up of the load using MK-105 pendants and cargo nets. VERTREP operations are similar to the external loading of LF supplies; the only difference is the operational pace on the flight deck. VERTREP operations are accelerated because of the need to rapidly execute the resupply operation so that ships may return to normal schedule. The same procedures previously outlined for rigging and lifting external cargo loads also apply to VERTREP cargo.
- During external load recovery, flight deck combat cargo personnel are responsible for the load once it touches down on the flight deck. The CCO/CCA orchestrates the safe and orderly movement of the cargo/vehicles/equipment using vehicle operators, MHE, 1 Alpha/ship's platoon or troop guides, and cargo handlers. There are two key points to remember when recovering cargo/vehicles/equipment on the flight deck. The first is that all movements must be closely coordinated with flight deck control and primary flight control. The second key point is to never move a vehicle or piece of unit equipment without the unit being present and a licensed operator actually driving the vehicle. Combat cargo personnel are also responsible for recovering all lifting slings, nets, and pendants from cargo, vehicles or equipment once the item is delivered to the ship via external lift.

Advance Planning and Preparations Checklist

Ensure that the following actions are complete:

- Flight deck safety and offload/onload briefings conducted for 1 Alpha/ship's platoon cargo handlers.
- 1 Alpha is properly set and all required personnel and equipment are on station.

- All unnecessary personnel cleared from the flight deck.
- 1 Alpha/ship's platoon troop guides and cargo handling personnel properly dressed and equipped and are familiar with their duties.
- Effective arrangements made for loading/unloading cargo according to assigned priorities.
- All obstructions removed from cargo/vehicle/personnel routes to and from the flight deck.
- Loads prepared and properly spotted on the flight deck.
- External lift cargo properly rigged to include the nets, slings, and pendants.
- Facilities available for effecting emergency repair of wheeled vehicles and all ship's organic MHE/CHE.

Execution Checklist

Ensure that each of the following actions is completed:

- Flight operations are conducted in accordance with NWP 3-04.1M, NATOPS, and ship's SOP.
- Effective communications are maintained with all stations.
- Debark control coordinates all serial movements.
- The CCO/CCA supervises all cargo handling operations.
- Loads are handled smartly, safely, and expeditiously and that they are inspected for potential FOD hazards prior to movement to or on the flight deck.
- Vehicles and MHE/CHE are operated in a safe manner by licensed operators.
- Required cargo records and status boards are maintained.

Receiving and Handling Casualties from Helicopters and Aircraft

Combat cargo personnel are not specifically responsible for the shipboard planning and

execution when receiving and processing casualties. This duty is normally assigned to the ship's medical officer. However, combat cargo personnel does play a major role given the overall responsibility to the CO for loading and offloading all personnel, supplies, and equipment. This section highlights some of the considerations, planning, and preparations that must be addressed relative to receiving casualties via the flight deck. A definitive list of assigned tasks, duties, and responsibilities is found in the ship's mass casualty bill.

Special Considerations

Prior to the commencement of the evolution, the combat cargo personnel should—

- Check the serviceability of all communications circuits and equipment designated for use by all embark/debark control stations (EMCON permitting).
- Set up embark status boards in accordance with the latest operational plans.
- Brief key flight deck control personnel and 1 Alpha/ship's platoon troop guides, medical personnel, stretcher-bearers, and master-at-arms or troop guards.
- Ensure the ship's morgue freezers are on and operational (coordination with the ship's medical department is required).

Planning and Preparation

- Instruct all stretcher-bearers on the correct method for transporting casualties to medical triage/battle dressing stations and the appropriate routes to be used.
- Ensure that the designated routes from medical triage/battle dressing stations are clear of obstacles that might impede the movement of casualties.
- Verify the location of the master-at-arms/troop guard station and the medical triage/battle dressing station area. Master-at-arms personnel manning this station will secure and account for ammunition and weapons from casualties.

- Ensure medical has been provided a list of names, by blood type, for all embarked LF and NSE personnel.
- Ensure debark control provides instructions for flight deck debark, flight deck control, and primary flight control that emphasizes—
 - Organization of the ship for embarking/receiving casualties.
 - Safety procedures and special hand signals for stretcher-bearers as well as 1 Alpha/ship's platoon troop guides on the flight deck.
 - Embark/debark communications via the 1MC/3MC/5MC and sound powered phone circuits while also ensuring communications casualty procedures are addressed.

Safety

- Ensure all standard safety precautions are addressed during briefings and adhered to during the conduct of the evolution.
- Ensure 1 Alpha/ship's platoon troop guides, medical personnel, and stretcher-bearers obtain authorization from the LSE prior to moving to or away from aircraft with engaged rotors.
- Ensure that each casualty is inspected for FOD hazards prior to movement.

Procedures for Internal Cargo Loading and Unloading

- Conduct flight operations in accordance with NWP 3-04.1M and the ship's appropriate NATOPS manual.
- When the ship receives information relative to an inbound CASEVAC, it should automatically set flight quarters and institute the procedures for handling casualties outlined in the ship's mass casualty bill. All 1 Alpha/ship's platoon and LF designated personnel should immediately report to their stations and don their flight deck safety equipment and await instructions from the CCO/CCA.
- Primary flight control will determine the quantity and nature of the casualties from the inbound aircraft via radio communications and

pass the information to debark control, flight deck control, flight deck debark, and the ship's medical department. Primary flight control should land CASEVAC aircraft in spots appropriate for personnel casualty processing and state their intentions to the appropriate embark/debark command and control stations.

Procedures for External Cargo Loading, and Unloading

Once the ship receives the CASEVAC aircraft, casualties will normally be processed and handled as follows:

- Once the aircraft lands on the designated spot, two 1 Alpha/ship's platoon troop guides approach the rear of the aircraft after receiving authorization from the LSE. The lead 1 Alpha/ship's platoon guide signals the LSE to have the pilot lower the aircraft's tail ramp and leads the other guide near the tail ramp so that they might observe the interior of the aircraft. The lead guide is positioned at a safe location adjacent to the side of the aircraft while maintaining visibility of the other guide and the LSE. All wounded troops capable of walking and who require escorts will be asked to stand up via hand and arm signals. Once they stand they will be escorted to the triage area via the most direct manner.
- Casualties who remain on the aircraft will be considered as litter patients and the lead troop guide will ascertain the number of litters required and relay this information to flight deck debark. The lead guide will signal and direct the four-man stretcher-bearer teams to and from the helicopter while keeping the LSE informed of the movements. Only one stretcher-bearer team will enter the aircraft at a time and load the casualty so that the casualty is carried out of the aircraft feet first. Once loaded, they will signal the troop guide that they are ready to exit the aircraft.
- The lead guide signals the LSE that a stretcher-bearer team is prepared to depart the aircraft. This process is repeated until all casualties have been removed from the aircraft. In those

instances where multiple litter patients are unloaded, a second stretcher team can be kept at the foot of the tail ramp in a kneeling position while firmly grasping the litter to prevent it being blown away. The second team boards the aircraft after the first is clear of the ramp. Once the last patient has been carried off the aircraft, the lead guide signals the LSE to raise the ramp and departs the aircraft spot with all of the team members to a predetermined safety area.

- Once the casualty is received at the medical triage/battle dressing station area, medical personnel will administer the appropriate medical care. Medical personnel will also direct the stretcher-bearers on where to place the patient/casualty.
- The ship's master-at-arms/troop guard will check casualties for ammunition and secure their weapons. The guard force must ensure that a tag or label is affixed to each weapon taken into custody. The tag should include:
 - Rank.
 - Last name and middle initial(s).
 - Branch of Service.
 - Last four digits of the Social Security number.
 - Unit.
 - Collected munitions products will be boxed, unitized or palletized and sealed. Markings or placards with the essential information of DODIC/NALC, quantities, and owning unit will be affixed. It is imperative that both the ship's personnel (aviation ordnance men or gunner's mates) and LF ammunition technicians are present during this process. All collected munitions will be stored in appropriate magazines in accordance with applicable directives/instructions.
 - Collected weapons will be transferred and stored in a designated location. It is important that this location be identified prior to receiving casualties and published to the master-at-arms/troop guard personnel.

Advance Planning and Preparation Checklist

Ensure that the following actions are complete prior to receiving and handling casualties on the flight deck:

- Communications circuits are tested and functioning.
- Stretcher-bearers are properly trained on their duties by the ship's medical department. They will be used when transporting casualties must also be trained on appropriate flight deck equipment/procedures and the routes that to and from medical triage areas.
- The flight decks and all of the routes to medical triage/sick bay/battle dressing station areas are checked, and the routes are clear of obstacles.

Execution Checklist

Ensure that the following items are accomplished during each evolution:

- Prescribed procedures are followed. Deviations from normal procedures must be approved prior to execution and all parties briefed accordingly.
- Casualties are handled safely, expeditiously, and efficiently.
- Casualties are properly secured and protected from the elements and hazards while being transported.

Loading/Unloading Passengers, Mail, and Cargo

Since PMC is an administrative evolution, combat cargo personnel are required to manage orchestrate PMC loading and unloading requirements involving the movement of cargo, vehicles or personnel via the flight deck.

Special Considerations

- Coordinate with the ship's XO, SupO, CHENG, administrative officer, post office, and embarked organizations 24 hours in advance. This coordination will allow the combat cargo personnel to determine what ship's personnel, supplies, equipment, and mail require movement via scheduled PMC flights.
- Arrange for a shipboard working party (to include the LF if embarked) if necessary, to consolidate and pre-stage mail and cargo.
- Expect daily PMC flights between the various ships, when deployed. Normally an air tasking order (ATO) is promulgated daily by the TACRON. The ATO consolidates all movement requirements, and outlines the next day's flight schedule. This is a useful tool for forecasting and planning the next day's air operations and for identifying inbound and outbound PMC. Keep in mind that it is the best guess the air operations personnel have at the time of the messages release; there will be unexpected and unscheduled movements.

Planning and Preparation

- Establish liaison with the ship's department heads and embarked organizations 24 hours in advance of PMC evolutions. The best way to do this is to attend the air planning board on the large deck ships.
- Monitor the daily air plan/ATO and make liaison with the ship's air officer for updated flight operations information.
- Conduct briefings with key flight deck control personnel, 1 Alpha/ship's platoon guides, and cargo handlers.
- Arrange and designate an administrative muster area for passengers (i.e., hangar, triage area, mess decks, etc.).
- Publish required muster times to outbound passengers.
- Arrange for a staging area and working party to pre-stage mail and cargo, as required.

- Establish inbound passenger control station for shipboard security check, personnel verification, and muster for reporting purposes.
- Obtain authorized outbound passenger list from the ATO. Combat cargo should immediately notify the HDC and the TACRON for authorization to load passengers whose names do not appear on the ATO. The same approval process must be followed if cargo, above and beyond that listed on the ATO, requires transportation.

Safety

- Ensure all standard safety precautions are met.
- Ensure 1 Alpha/ship's platoon guides/cargo handlers obtain authorization from the LSE before moving to or from aircraft with engaged rotors.
- Ensure all passengers receive the required pre-flight safety briefing and that they are outfitted with a cranial, float coat/personal floatation device, and goggles, as required.
- Ensure that all passengers and cargo are properly screened for FOD hazards prior to their movement to or from any aircraft.

Procedures for Loading a PMC Flight

- Conduct the required safety briefing for all outbound passengers.
- Ensure 1 Alpha/ship's platoon troop guides obtain inflatable life jackets and cranials for each passenger from the designated PMC helicopter. Ensure outbound personnel don their safety equipment in the proper manner prior to their movement across the flight deck.
- Prioritize all outbound passengers, mail, and cargo in accordance with the ship's XO's instructions. If conflicts arise about the prioritization, combat cargo personnel should highlight the instructions and direct questions to the XO.
- Ensure that all outgoing mail and cargo are properly bagged, boxed, palletized or unitized. Proper address, labels, markings or placards must be firmly affixed to mail and cargo.
- Ensure the load for each PMC evolution is within the aircraft's operating limits based on

the aircraft type and whether it is an administrative or logistics mission. Direct questions regarding the maximum weight authorized for each type aircraft to either the ship's air operations officer or the aircraft squadron.

- Direct cargo handlers and MHE operators to load unitized and palletized cargo.
- Distribute the passenger manifest in accordance with individual ship and existing standard instructions.
- Ensure the standard procedures previously addressed, (for loading passengers and cargo onboard aircraft using two 1 Alpha/ship's platoon troop guides and qualified/trained MHE operators) are also used during PMC operations.

Procedures for Unloading a PMC Flight

- For maximum safety, ensure at least two 1 Alpha/ship's platoon troop guides will be assigned to lead passengers from the aircraft to the designated inbound passenger control station where a security check and administrative processing will be accomplished.
- Direct 1 Alpha/ship's platoon guides and cargo handlers to offload any hand-carried items.
- Direct cargo handlers and MHE operators to offload unitized/palletized cargo.
- Coordinate with the appropriate shipboard organizations to pick-up incoming mail and cargo from the designated staging area.

Advance Planning and Preparation Checklist

Ensure that the following actions are completed prior to each scheduled evolution:

- All stations are promptly and adequately manned.
- Inflatable life vest and cranial are worn by all personnel.
- Communications are adequate and tested prior to each PMC evolution (EMCON permitting).

- Routes to and from the flight deck are clearly marked and free of obstructions.
- Cargo handlers are equipped with properly colored (white) flight deck equipment (cranials, float coats).
- Briefings are conducted with all combat cargo personnel as well as flight deck control, aircraft handling personnel, and appropriate ship's department heads.

Execution Checklist

During the actual execution of PMC evolutions, ensure that the following actions/items are accomplished:

- All prescribed flight deck safety and loading procedures are followed.
- Communications are satisfactorily tested (EMCON permitting).
- Passenger manifests and muster records are maintained, and status boards reflect current and planned operations.
- Passengers proceed in a safe and orderly manner while following the directions of the 1 Alpha/ship's platoon troop guides.

Noncombatant Evacuation Operations

Depending on the geographic location and amount of time available for conducting this complex operation, the flight deck may be the most expeditious means by which to extract personnel. Although this appendix does not specifically address the NEO, it is imperative that combat cargo personnel review the ship's NEO bill. Fleet regulations require each amphibious ship to develop a NEO bill and to exercise it as a matter of routine. Given the wide variance in shipboard NEO procedures, the CCO should look to this instruction for the definitive tasks, duties, and responsibilities.

APPENDIX J

GLOSSARY

Section I. Acronyms and Abbreviations

AAV	amphibious assault vehicle	COMNAVSURFPACINST	Commander, Naval Surface Force, Pacific Instruction
AAVR	assault amphibious vehicle, recovery	COMPHIBGRU	commander, amphibious group
ACE	aviation combat element	COMPHIBRON	commander, amphibious squadron
AF	amphibious force	CONUS	continental United States
AMMOLANT	Ammunition Management Office, Atlantic	COT	commanding officer of troops
AMMOPAC	Ammunition Management Office, Pacific	CP	control point
AOA	amphibious objective area	CSC	Convention for Safe Containers
ARG	amphibious ready group	CSS	combat service support
ASC(A)	assault support coordinator (airborne)	CV	aircraft carrier
ATF	amphibious task force		
ATO	air tasking order		
		DASC	direct air support center
BALS	berthing and loading schedule	DD	Department of Defense
BD	boat deck	DOD	Department of Defense
		DODIC	Department of Defense information code
CASEVAC	casualty evacuation	DP	departure point
CCA	combat cargo assistant		
CATF	commander, amphibious task force	EEBD	emergency escape breathing device
CCO	combat cargo officer	EOD	explosive ordnance disposal
CH-46	Sea Knight helicopter	EWTGLANT	Expeditionary Warfare Training Group Atlantic
CH-47	Chinook helicopter	EWTGPAC	Expeditionary Warfare Training Group Pacific
CH-53D	Sea Stallion helicopter		
CH-53E	Super Stallion helicopter	FD	flight deck
CHE	container handling equipment	FM	field manual
CHENG	chief engineer	FMFM	fleet Marine force manual
CJCS	Chairman of the Joint Chiefs of Staff	FOD	foreign object damage
CLF	commander, landing force		
CLZ	craft landing zone	HEALT	helicopter employment and assault landing table
CNETINST	Commander Naval Education and Training (US Navy)	HD	hangar deck
CO	commanding officer	HDC	helicopter direction center
COMNAVSURFLANT	Commander, Naval Surface Force, Atlantic	HLSC	helicopter logistics support center
COMNAVSURFPAC	Commander, Naval Surface Force, Pacific	HLZ	helicopter landing zone
COMNAVSURFLANTINST	Commander, Naval Surface Force, Atlantic Instruction	HWSAT	heliteam wave and serial assignment table

IP.....	initial point	MSL.....	modified surf limit
ISO.....	International Organization for Standardization	MTMCTEA.....	Military Traffic Management Command Transportation Engineering Agency
LARC.....	lighter, amphibious, resupply, cargo	MV-22.....	Osprey helicopter
LCAC.....	landing craft air cushion	NAEC.....	Naval Air Engineering Center
LCAT.....	landing craft availability table	NALC.....	naval ammunition logistic code
LCM-8.....	landing craft, mechanized	NATOPS.....	naval air training and operating procedures standardization
LCPL.....	landing craft personnel (large)	NAVEDTRA.....	Naval education and training
LCU.....	landing craft, utility	NAVORDCENINST.....	naval ordnance center instruction
LF.....	landing force	NAVSUP.....	naval supply
LFORM.....	landing force operational reserve material	NAVSEA OP.....	Naval Sea Ordnance Publication
LHA.....	amphibious assault ship (general purpose)	NAVSEASYSKOM.....	Naval Sea Systems Command
LHD.....	amphibious assault ship (multipurpose)	NAVSURFLANT.....	Naval Surface Force, Atlantic
LOD.....	line of departure	NAVSURFPAC.....	Naval Surface Force, Pacific
LPD.....	amphibious transport dock	NCEA.....	noncombatant expenditure allowance
LSD.....	landing ship, dock	NEO.....	noncombatant evacuation operation
LSE.....	landing signal enlisted	NSE.....	Navy support element
LST.....	landing ship, tank	NWP.....	naval warfare publication
LV.....	lower vehicle deck	OIC.....	officer in charge
LZ.....	landing zone	OPNAVINST.....	Chief of Naval Operations Instruction
MARCORSYSCOM.....	Marine Corps Systems Command	OpsO.....	operations officer
MARFORLANT.....	Marine Corps Forces, Atlantic	PCO.....	primary control officer
MARFORLANTO.....	Marine Corps Forces, Atlantic Order	PCP.....	penetration control point
MARFORPAC.....	Marine Corps Forces, Pacific	PCS.....	primary control ship
MARFORPACO.....	Marine Corps Forces, Pacific Order	PHIBGRU.....	amphibious group
1MC/3MC/5MC/10MC.....	multi-channel public address system	PHIBRON.....	amphibious squadron
MCAS.....	Marine Corps air station	PMA.....	preventive maintenance-annual
MCO.....	Marine Corps order	PMC.....	passengers, mail, and cargo
MCWP.....	Marine Corps warfighting publication	POL.....	petroleum, oils, and lubricants
MD.....	mezzanine deck (LSD)	PQS.....	personnel qualification standards
MEF.....	Marine expeditionary force	QOL.....	quality of life
MEU.....	Marine expeditionary unit	QUADCON.....	quadruple container
MHE.....	material handling equipment	RP.....	rendezvous point
MILVAN.....	military van (container)		
MLA.....	mission load allowance		
MOGAS.....	motor gasoline		
MSI.....	modified surf index		

- SEAL sea-air-land team
- SFWL Ship's Force Work List
- SH-60 Sea Hawk helicopter
- SIXCONS six containers together
- SLCP ship's loading characteristics pamphlets
- SOP standard operating procedure
- SPCCINST Ships Part Control Center Instruction
- SPECWAR special warfare
- SPECWARCOM ... Special Warfare Command
- SPMAGTF special purpose Marine air-ground task force
- SupO supply officer
- TAC(A) tactical air coordinator (airborne)
- TACC tactical air control center
- TACGRU tactical air control group
- TACLOG tactical-logistical group
- TACRON tactical air control squadron
- TADC tactical air direction center
- TEO team embarkation officer
- TT truck tunnel
- UH-1N Huey helicopter
- UNITAS annual US-South American allied exercise
- US United States
- USDA United States Department of Agriculture
- USMC United States Marine Corps
- UV upper vehicle deck
- VERTREP vertical replenishment
- VSA vehicle stowage area (LSD CV)
- WD well deck
- XO executive officer

Section II. Terms and Definitions

Life aboard ship requires Marines develop a new vocabulary, even new terms for common items. Safety cannot be overemphasized. A word or words have exact meaning or identify a certain sequence of actions, making it unnecessary to repeat orders or give too many details. This glossary is not all encompassing, but contains many nautical orders and terms shipboard personnel must understand.

abaft the beam—**1.** Any direction between the beam and the stern, more behind a vessel than in front of it. **2.** In an arc of the horizon between a line that crosses the ship at right angles or in the direction of her beams, and that point of the compass toward which her stern is directed.

abeam—Bearing 90 degrees or 270 degrees relative from own ship's heading or course.

aboard—In a ship or on a naval station. The sailor's term; non-deployers use "onboard."

action phase—In an amphibious operation, the period of time between the arrival of the landing forces of the amphibious force in the operational area and the accomplishment of their mission. (JP 3-02)

adrift—Loose from mooring; scattered about; not in proper stowage; not secured to a stationary object.

aground—When any part of a vessel is resting on or is in contact with bottom. A ship runs aground or goes aground.

aloft—Above the decks, on the mast or in the rigging.

amphibious force—An amphibious task force and a landing force together with other forces that are trained, organized, and equipped for amphibious operations. Also called **AF**. (JP 3-02)

amphibious operation—A military operation launched from the sea by an amphibious force, embarked in ships or craft with the primary purpose of introducing a landing force ashore to accomplish the assigned mission. (JP 3-02)

amphibious squadron—A tactical and administrative composed of amphibious assault shipping to transport troops and their equipment for an amphibious assault operation. Also called **PHIBRON**. (JP 1-02)

amphibious task force—A Navy task organization formed to conduct amphibious operations. The amphibious task force, together with the landing force and other forces, constitutes the amphibious force. Also called **ATF**.

anchor at short stay—The anchor chain is out at a minimum length with the anchor still holding.

anchor ball—A black, circular shape hoisted to indicate the ship is anchored.

anchor buoy—A small float attached to the anchor by a line, to mark the anchor's location if the chain is slipped or parted.

anchor in sight—A report made by the anchor detail to the bridge when the anchor is first sighted when bringing it in.

anchor is clear—When the anchor is first clear of the water and there is nothing fouling it or on it.

anchor is fouled/fouled anchor—The anchor has picked up a cable, debris, rock or coral, or is wrapped in its own chain.

anchor is shod—The anchor is covered with mud or bottom.

anchors aweigh—An expression used to report that an anchor has just been lifted clear of the water. The ship bears the weight of the anchor and is considered to be underway.

annual variation—A change in Earth's magnetic lines of force, varying in different localities.

arm—That part of an anchor located between the crown and the fluke. Upright or nearly upright strength member of a davit. The act of plastering tallow into a recess in the bottom of a sounding lead; this is called arming the lead and is done for the purpose of bringing up a specimen of the bottom.

assault support coordinator (airborne)—An aviator who coordinates, from an aircraft, the movement of aviation assets during assault support operations. Also called **ASC(A)**.

athwartships—Anything that extends from one side to the other, such as an athwartships' passageway.

athwart the hawse—The situation of a ship when she is driven by the wind, tide or other accident, across the forepart of another. This phrase is equally applied when the ships bear against each other, or when they are at a small distance; the transverse position of the former to the latter being principally understood.

avast—An order to stop or cease, as "**AVAST HEAVING.**"

backing and filling—The act of a sailing craft repeatedly catching and losing the wind from its sails so as to be unable to make headway. Extended to cover the "fits and starts" of a person who cannot make up his or her mind. Also the backing and going ahead of a ship in casting or turning in confined waters.

backstay—Standing or running (adjustable) wire rigging that supports the mast from the stern; a wire mast support leading aft to the deck or another mast.

back to battery—Return of a gun after recoil to firing position.

barge—A flat-bed, shallow-draft vessel with no superstructure that is used for the transport of cargo and ships' stores or for general utility purposes. (JP 1-02)

batten—Long strip of wood or steel wedged against the edges of hatch tarpaulins to secure them. Strips of light wood inserted in the leech of a sail to prevent the leech from curling. Long, removable wooden or steel members extending from the deck to the overhead, used in storerooms to keep equipment and stores from shifting. In cargo holds, long planks along the ship's sides that protect cargo from rust and condensation.

batten down—The act of making a hatch watertight by wedging the battens against the tarpaulins, or of wedging shut or dogging down any watertight opening.

beam—The breadth of a ship at the widest point.

beam ends—A vessel lying on its side is said to be on its beam ends. Often used to indicate that a vessel has taken an unusually large roll and was almost on its side.

becket—The fitting on a block to which the dead end of the fall is attached.

belay—The act of securing a line to a cleat, set of bits or any other fixed point. In connection with an order or announcement, expresses the idea to disregard, as in "**BELAY THAT LAST ORDER.**"

betwixt wind and water—That portion of the vessel along the water line which, when the vessel rolls, is ultimately above or below water.

bight—A bend in a coast forming an open bay or an open bay formed by such a bend. (JP 4-01.6)
A loop of rope, line or chain.

bill—A ship's publication listing operational or administrative procedures. (JP 3-04.1)

block—A device consisting of a pulley encased in a shell of wood or metal, through which a line or wire rope can run freely. A snatch block is one in which the shell opens by means of a hinged strap to take a line or wire.

boat boom—A spar swung out from a ship's side from which boats can be hauled out or made fast. Permits boats to ride safely alongside a ship while at anchor.

boat falls—The rig used to hoist or lower small boats.

boat group—The basic organization of landing craft. One boat group is organized for each battalion landing team (or equivalent) to be landed in the first trip of landing craft or amphibious vehicles. (JP 1-02)

bollard – A steel or iron post on a dock, pier or wharf around which the eye or bight of a ship's mooring line is secured.

boltrope—Line sewed around the edge of a sail, awning or other canvas.

breaker—A wave in the process of losing energy where offshore energy loss is caused by wind action and nearshore energy loss is caused by the impact of the sea floor as the wave enters shallow (shoaling) water. Breakers plunge, spill or surge. (JP 4-01.6)

breaker line—The outermost boundary of a breaker area; also called the surf line.

break off—When walking away with a line or running in a line, to let go, return to the point from which the line is being hauled, take a new hold, and walk or run away again. (See walk-away and run away.)

breast line—A mooring line (perpendicular to the ship's centerline) that secures the ship to the pier.

breech—The opposite end from the muzzle of a gun where rounds are inserted for firing.

breech block—A device that closes the chamber of a large gun after loading. In small arms, called a bolt.

broach—When a watercraft is thrown broadside to the wind and waves, against a bar or against the shoreline. (JP 4-01.6)

bull rope—**1.** Wire used in cargo handling in connection with the topping lift. **2.** The term for the wire from a towing machine. **3.** Used for hoisting a topmast or topgallant mast on a square-rigged ship.

bull's-eye—**1.** A round piece of lignum vitae, with a hole in the center and scored around the edges to take the eye of a line, used for connecting rigging. **2.** A small thick disk of glass inserted in a deck, roof, floor, ship's side, etc., to let in light. **3.** The nickname for a compartment identification stencil.

bulwark—Solid fence like barrier along the edges of weather decks to keep things from going overboard and the seas from coming aboard.

caliber—Diameter of a gun's bore in inches: a 3"/50 gun is 3" in bore diameter and 50 caliber's (150") long.

cantilever—A projecting beam supported only at one end.

capstan—A device consisting of a vertical cylinder rotated manually or by motor, used for hoisting weights (anchors) by winding in a cable.

carry away—The act of breaking loose.

carry rudder—When a vessel requires a constant amount of rudder on one side to maintain a steady course, it is said to be carrying rudder.

casting—The act of turning a ship through 360 degrees without appreciably changing its position; done by alternately backing and going ahead on its engines and repeatedly shifting the rudder.

casualty evacuation—The movement of the sick, wounded or injured. It begins at the point of injury or the onset of disease. It includes movement both to and between medical treatment facilities. All units have an evacuation capability. Any vehicle may be used to evacuate casualties. If a medical vehicle is not used it should be replaced with one at the first opportunity. Similarly, aeromedical evacuation should replace surface evacuation at the first opportunity.

caulk—To make a joint watertight.

chain pipe—The tube (pipe) through which the anchor cable leads from the forecandle deck to the chain locker.

check—To keep a strain on a line but to ease out only enough to prevent its parting.

chock-a-block—**1.** A line drawn so tight as to have the blocks pulled together so that no further movement is possible. **2.** When the sail, flag, or any gear is fully raised, it's said to be chock-a-block. **3.** Full; filled to the extreme limit.

clear for action—Prepare a ship for (battle stations). Remove items like jack staffs, stow loose gear, open ready service ammunition boxes, etc.

clear for running—Coiled so as to be ready to run out quickly without fouling.

cleat—A metal fitting with projecting arms or ends on which a rope or wire can be wound or secured.

close up—The act of hoisting a flag to, or in, its highest position.

cockle—Kink in an inner yarn of rope, forcing the yarn to the surface.

collar—Metal ring that steadies the base of a mast, or supports the upper end of a boom that is stowed upright.

colored beach—That portion of usable coastline sufficient for the assault landing of a regimental landing team or similar sized unit. In the event that the landing force consists of a single battalion landing team, a colored beach will be used and no further subdivision of the beach is required. (JP 3-02)

combat cargo officer—An embarkation officer assigned to major amphibious ships or naval staffs, functioning primarily as an adviser to and representative of the naval commander in matters pertaining to embarkation and debarkation of troops and their supplies and equipment. Also called CCO. (JP 1-02)

combat loading—The arrangement of personnel and the stowage of equipment and supplies in a manner designed to conform to the anticipated tactical operation of the organization embarked. Each individual item is stowed so that it can be unloaded at the required time. (JP 1-02)

commander, amphibious task force—The US Navy officer designated in the initiating directive as commander of the amphibious task force. Also called CATF.

commander, landing force—The officer designated in the initiating directive for an amphibious operation to command the landing force. Also called CLF.

commanding officer of troops—On a ship that has embarked units, a designated officer (usually a senior embarking unit commander) who is responsible for the administration, discipline, and training of all embarked units. Also called **COT**. (JP 1-02)

concept of operations—A verbal or graphic statement, in broad outline, of a commander's assumptions or intent in regard to an operation or series of operations. The concept of operations frequently is embodied in campaign plans and operation plans; in the latter case, particularly when the plans cover a series of connected operations to be carried out simultaneously or in succession. The concept is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose.

constant tension winch—A winch that keeps a set constant tension on a wire by automatically paying out and recovering slack.

container—An article of transport equipment that meets American National Standards Institute/International Organization for Standardization standards that is designed to be transported by various modes of transportation. These containers are also designed to facilitate and optimize the carriage of goods by one or more modes of transportation without intermediate handling of the contents and equipped with features permitting ready handling and transfer from one mode to another. Containers may be fully enclosed with one or more doors, open top, refrigerated, tank, open rack, gondola, flatrack, and other designs.

container-handling equipment—Items of materials-handling equipment required to specifically receive, maneuver, and dispatch International Organization for Standardization containers. Also called **CHE**. (JP 4-01.7)

control vessel—The ship that guides and directs the ship-to-shore movement in a surfaceborne landing. In underway replenishment, this vessel sets the replenishment course and speed and is the guide.

coxcombing—Fancy knot work consisting of coils of line worked around rails, handles or stanchions and providing a secure grip.

cross pointing—Also known as coach whipping. Line, canvas or leather braided around stanchions for decoration and protection.

crow—**1.** Rounded part of an anchor below the shank. **2.** A knot in the end of a line made by interlacing the strands.

day beacon—An unlighted structure that serves as a daytime aid to navigation.

daymark—The identifying characteristics of a day beacon. Also, the shapes or signals displayed by a vessel to indicate a special purpose, such as fishing, laying cable, and dredging.

D-day—The unnamed day on which a particular operation commences or is to commence.

dead reckoning—To plot a future position based on travel from a known position using speed, time, and course.

debarkation—The unloading of troops, equipment or supplies from a ship or aircraft.

deck load—Cargo stowed on the weather docks.

deep six—A fathom, the unit of measurement in most maritime countries for the depth of the sea, is 6 feet. Sailors used the term to refer to throwing something overboard and it has come to mean getting rid of something.

deviation—The angular difference between magnetic and compass headings. (JP 1-02)

dinghy—**1.** A small boat powered by sails, oars or a motor carried as a lifeboat on a larger boat. **2.** A small rowboat. **3.** An inflatable rubber life raft.

dip the eye—To arrange the eyes of mooring lines on bits or bollards in such a way that one line dips

into the eye of the other so that either line may be removed without disturbing the other.

dock—**1.** The water space between adjacent piers or the space in a dry dock. **2.** Maneuver a vessel into or next to a dock.

docking keel—Keel-like projection between the main keel and the turn of the bilge; used to support the ship on blocks in a dry-dock.

dodger—Wood, metal or canvas upward extension of the forward bulwark on a bridge; serves as a windbreaker.

dogwatch—One of two 2-hour watches; 1600–1800 or 1800–2000.

dolphin—**1.** A piling or a nest of piles off a pier or beach or off the entrance to a dock used for mooring. **2.** A rope or strap round a mast to support the puddening, where the lower yards rest in the slings. Also, a spar or buoy with a large ring in it, secured to an anchor, to which vessels may bend their cables.

down by the head (properly, by the head) —Said of a vessel when its draft forward is deeper than its draft aft.

down by the stern (properly, by the stern)—Said of a vessel when its draft aft is deeper than its draft forward.

downhaul—Any line, wire or tackle that applies a downward pull. Usually paired with a halyard.

dowse/douse—**1.** To put out. **2.** To lower a sail quickly. **3.** To wet down or immerse in water.

draft—The depth of water that a vessel requires to float freely; the depth from the water line to the keel. (JP 4-01.6)

drogue—Any object used to increase the drag of a vessel to slow it down; a sea anchor.

drum hooks—A sling containing a pair of movable hooks; used for hoisting a drum, cask or barrel by its chine. Also called chine hooks.

dry dock—An enclosed basin into which a ship is taken for underwater cleaning and repairing. It is fitted with watertight entrance gates that when closed, permit the dock to be pumped dry.

dunnage—Any material used to separate layers of cargo, create space for cargo ventilation or insulate cargo against chafing. Usually to cheap wood boarding used for those purposes.

ease—**1.** To do something slowly, as move slowly away from the pier. **2.** Let a line out smoothly, but keep it taut.

ebb—**1.** Tide passing from high to low, with the current going out to sea. **2.** The tidal movement of water away from the land and toward the sea, as in ebb current; the falling of the water level from high tide to low tide, as in ebb tide.

E-day—Embarkation Day; the day landing force personnel, supplies, and equipment embark assigned shipping.

Eldridge method—Method of mooring with two anchors in which one anchor's chain is dipped through the other's hawsepipe before either anchor is let go.

embarkation—The process of putting personnel and/or vehicles and their associated stores and equipment into ships and/or aircraft. (JP 1-02)

embarkation officer—An officer on the staff of units of the landing force who advises the commander thereof on matters pertaining to embarkation planning and loading ships.

embarkation plans—The plans prepared by the landing force and appropriate subordinate commanders containing instructions and information concerning the organization for

embarkation, assignment to shipping, supplies and equipment to be embarked, location and assignment of embarkation areas, control and communications arrangements, movement schedules and embarkation sequence, and additional pertinent instructions relating to the embarkation of the landing force. (JP 3-02)

embarkation team—A temporary administrative formation of all personnel with supplies and equipment embarking or to be embarked (combat loaded) aboard one ship. (JP 1-02)

fairlead—A fitting, such as a block, that provides friction-free passage for a line or cable. Also, a clear route for a line or cable.

fake—The act of disposing of a line, wire or chain by laying it out in long, flat bights laid one alongside the other.

fall off—Said of a ship or boat when it drifts away from a desired position or direction.

fancy-line—A line rove through a block at the jaws of a gaff, used as a downhaul. Also, a line used for cross-hauling the lee topping-lift.

fancy work—Decorative knots and pieces of canvas and leather fashioned in patterns or lace. Examples of this work are curtains or mats in an admiral's barges, captain's gigs, and/or quarterdecks.

fife rail—A rail around the mast or on the bulwarks with holes for belaying pins to which line or halyards are attached.

fishhook—A broken end of wire protruding from a wire rope.

flemish—Method of disposing a line by coiling it tightly flat on deck with the second coil inside the first, and so on.

flight deck—The upper deck of an aircraft carrier that serves as a runway. (JP 1-02)

flood—That period when a tidal current is flowing landward. A rising tide.

flotsam—General term for articles that will float if jettisoned. Floating debris left on the surface by a sunken ship.

flukes—Broad arms or palms of an anchor. The part of the anchor that digs into the bottom.

footrope—Line by means of which the foot of a hammock is secured to a billet hook. The lowermost line of a set of lifelines (also called foot line). The line hanging in a bight beneath a yard, bowsprit or jib boom. The rope stretching along a yard, upon which personnel stand when reefing or furling, formerly called *horses*.

forecastle—The section of a ship's upper deck situated at the bow forward of the foremast or a superstructure at the bow of a merchant ship where the crew is housed. Easily identified on Navy ships since the anchor capstans and controls are located on the forecastle. Also called **fo'csle**.

forefoot—The part of the keel that curves up to meet the stem, or where the stem joins the keel of the ship.

foreign object damage—Rags, pieces of paper, line, articles of clothing, nuts, bolts or tools that, when misplaced or caught by air currents normally found around aircraft operations (jet blast, rotor or prop wash, engine intake), cause damage to aircraft systems or weapons or injury to personnel. Also called **FOD**. (JP 3-04.1)

forestay—A line running from the bow of the boat to the upper part of the mast, designed to pull the mast forward. A piece of standing rigging leading forward.

foul anchor—Anchor with chain wrapped about a fluke or the stock, or with some other encumbrance entangled about it.

founder—To sink as a result of filling or flooding.

four-in-hand—The act of preventing a tackle from overhauling by gripping in both hands the parts of the fall between the blocks.

freeboard—The vertical distance between the waterline and the uppermost watertight deck at any location along the ship.

freshen the nip—To set up again. To veer or haul on a cable or rope or pull up on a backstay so that the nip or chafe part is moved away and a fresh part takes its place.

fulcrum—A prop or support. The point about which a lever turns. The prop of support of a lever in lifting or removing a heavy body.

furl—To roll up snugly and secure, as a sail or awning.

gangway—An opening in the rail or bulwark giving access to the ship; a narrow portable platform used as a passageway while a vessel is moored alongside a pier. That part of a vessel's side, amidships, where people pass in and out of the vessel.

gantline—Line used as a single whip for hoisting or lowering a boatswain's chair or one end of a stage.

gate—That part of a collar that opens on a hinge.

general unloading period—In amphibious operations, that part of the ship-to-shore movement in which unloading is primarily logistic in character and emphasizes speed and volume of unloading operations. It encompasses the unloading of units and cargo from the ships as rapidly facilities on the beach permit. It proceeds without regard to class, type or priority of cargo, as permitted by cargo handling facilities ashore. (JP 1-02)

gooseneck—Universal joint at the heel of a boom that allows the boom to be swung in any direction. Method used by a nozzleman to bend

a firehose in such a way that the hose does not kink and the stream of water can be directed to otherwise inaccessible spots, such as inside doors or under floor plates.

grommet—A reinforced hole in a sail or awning. A grommet can be fashioned with line or made of metal.

gudgeons—Eyes set in the stern or the rudder post to receive the rudder pintles, which allow the rudder to pivot.

guy—Any line, wire, or tackle that provides athwartships support or motion for a boom head or the head of a gin pole. (See shroud.)

gypsy (gypsy head)—Cylindrical device at the end of the shaft on a winch or horizontal shaft windlass, on which the turns of a line or wire are taken for heaving.

handling (ordnance) —Applies to those individuals who engage in the breakout, lifting or repositioning of ordnance or explosive devices in for to facilitate storage or stowage, assembly or disassembly, loading or downloading, or transporting. (JP 3-04.1)

hand-over-hand—Expresses the idea one hand after the other, as when a line is hauled in rapidly by hand or when a person climbs a line without using the legs and feet. Prevents rope burns and snagging. Hauling rapidly on a rope, by putting one hand before the other alternately.

handsomely—Slowly; deliberately; carefully. Used for an order, as, "**LOWER HANDSOMELY!**"

hatch boom—Cargo boom of a yard-and-stay rig plumbed over the cargo hatch.

hauling part—That part of a fall to which power is applied.

haul out—Order given to a boat coxswain to take the boat from the ship's side and secure it at the boat boom.

hawser—A heavy line (over 5 inches in circumference) for towing and mooring.

heave right up—Order given to heave the anchor up into the hawse. May be given as "**HEAVE RIGHT IN.**"

heave short—The act of heaving in the cable until the anchor is at short stay. The order usually is given as "**HEAVE ROUND TO SHORT STAY.**" To heave in on the cable until the vessel is nearly over her anchor.

head—**1.** The stem. **2.** The upper end of a lower mast, boom or gin pole. **3.** The upper edge of a four-sided fore-and-aft sail. **4.** A compartment that contains toilet facilities.

head line—A mooring line or hawser that is made fast-forward of a ship's pivot point, such as a tug passing a head line when working a ship or tow.

heave—**1.** To throw, as to heave the lead or heaving line. **2.** To haul in, especially by some powered heaving engine.

heave around—**1.** Haul in on a line, wire or chain by means of a powered heaving engine. **2.** The call, on a boatswain's pipe, that is the signal to start heaving around.

heave to—The act of stopping the headway of a vessel or of reducing headway to just enough to maintain steerageway.

helicopter direction center—In amphibious operations, the primary direct control agency for the helicopter group/unit commander operating under the overall control of the tactical air control center. (JP 1-02) The helicopter direction center is an agency within the Navy tactical air control

system and is positioned afloat. The helicopter direction center is not a Marine air command and control system agency, but it interacts closely with the direct air support center in the control of helicopter operations between ship and shore. The helicopter direction center also interacts closely with the air support element of the Marine expeditionary unit aviation combat element. Also called **HDC**.

helicopter landing diagram—A graphic portrayal of the lanes to and from the landing zone and the helicopter transports or landing zones. (MCRP 5-12C)

helicopter landing site—A designated subdivision of a helicopter landing zone in which a single flight or wave of assault helicopters land to embark or disembark troops and/or cargo. (JP 1-02)

helicopter support team—A task organization formed and equipped for employment in a landing zone to facilitate the landing and movement of helicopterborne troops, equipment, and supplies, and to evacuate selected casualties and enemy prisoners of war. Also called **HST**. (JP 1-02)

H-hour (amphibious operations) —For amphibious operations, the time the first assault elements are scheduled to touchdown on the beach, or a landing zone, and in some cases the commencement of countermine breaching operations. (JP 3-02)

hitch—**1.** A knot that secures a rope to another object such as a post, spar or ring or in certain circumstances, another rope. **2.** A knot whose loops come together in use, particularly under strain, yet is easily separated when strain is removed.

hogging line—Line temporarily used to hold a stage or other object close to the side of the ship.

hoist—To move an article vertically upward by means of some hoisting rig.

hoist away—**1.** An order to haul up. **2.** Go right on hoisting until stopped by another order.

hoist in—Hoist an object to a required height and swing it in.

hoist out—Swing out and lower away a boat.

hold—**1.** A cargo stowage compartment aboard ship. (JP 1-02); **2.** Secure the line so it does not allow slippage.

horse latitudes—Either of two belts or regions about 30 degrees N or 30 degrees S latitude, characterized by high pressure, calms, and light baffling winds. Thought to be so named because, in the days of sailing vessels, many ships lost all or part of their cargos of horses while becalmed in those areas.

house—**1.** Heave an anchor into the hawsepipe. **2.** To stow or secure in a safe place.
To *house* a mast, is to lower it almost half its length, and secure it by lashing its heel to the mast below.

housing line—**1.** See lifeline. **2.** A small cord made of three small yarns and used for seizings.

hull down—Said of a vessel when, because of distance and the curvature of the earth, only the superstructure is visible.

inboard lifelines—Temporary lifelines erected inboard of the permanent lifelines during heavy weather.

inhaul—In general, a line used to recover any piece of gear, such as a paravane or a trolley block. When replenishing at sea, the vessel providing the gear retains the inhaul and sends the “out haul” to the other ship.

in step—Said of a towing vessel and its tow when both meet and ride over seas at the same time.

Irish pennant—A loose end of line carelessly left dangling.

iron mike—Term applied to a gyroscopic robot steering mechanism.

jack staff—Upright spar at the stem to which the jack is hoisted.

jackstay—**1.** A rope, rod or batten along a ship’s yard to which the sail is fastened. **2.** A rope or rod running up the forward side of the mast on which the yard moves. **3.** Horizontal support to which articles such as seabags, tackles or coils of line can be lashed.

jigger—Light luff tackle for general use about the deck.

jumbo room—Regularly installed heavy duty swing derrick for handling extra-heavy lifts.

jumping on a line—The act of trying to start a stranded vessel with a sudden pull on the towline. Slack is provided in the towline, and the assisting vessel runs ahead under full power, fetching up short when the slack is taken out.

jury rig—**1.** A makeshift device or apparatus rigged as a substitute for gear regularly designed for the desired purpose. **2.** The act of setting up a jury rig.

ledge—**1.** A way in which an anchor is carried out by a ship’s boats and is dropped, then the ship hauls itself to the anchor. **2.** A small anchor, with an iron stock, used for warping.

keel—The lowermost central strength member of a ship that runs fore and aft, and from which the frames and the plating rise.

keel block—One of a line of blocks along a dry-dock bed; used to support the keel or docking keel of a vessel in dry-dock.

keel stop—Marker on a boat's keel that indicates its proper fore-and-aft placement for lowering into the chocks.

king post—**1.** One of a pair of short, strong uprights used to support twin cargo booms on some cargo vessels. **2.** Short, strong upright supporting the boom of a crane.

knife-edge—The rim of a door frame, hatch or post that meets the gasket for a watertight fit.

knock off—**1.** Expresses the idea to cease or to desist. **2.** An order to leave off work.

label plate—Plate in a boat that contains, among other data, the maximum number of personnel the boat may carry under good weather conditions.

labor—The act of a vessel in rolling and pitching heavily in a seaway.

landfall—First sight of land after a voyage.

landing craft—A craft employed in amphibious operations, specifically designed for carrying troops and their equipment and for beaching, unloading, and retracting. It is also used for resupply operations. (JP 1-02)

landing craft air cushion—A high-speed (40+ knots), over-the-beach, ship-to-shore amphibious landing vehicle capable of a 60-ton payload (75-ton overload). It is designed to lift all equipment organic to the MAGTF in an amphibious operation. Also called **LCAC**. (JP 1-02)

landing craft availability table—A tabulation of the type and number of landing craft that will be available from each ship of the transport group. The table is the basis for the assignment of landing craft to the boat groups for the ship-to-shore movement. (JP 1-02)

landing diagram—A graphic means of illustrating the plan for the ship-to-shore movement. (JP 1-02)

landing force—A Marine Corps or Army task organization formed to conduct amphibious operations. The landing force, together with the amphibious task force and other forces, constitute the amphibious force. Also called **LF**. (JP 1-02)

lanyard—**1.** A short line used as a handle or as a means for operating some piece of equipment, such as a firing lanyard on a gun. **2.** A line used to attach an article of equipment to the person, such as a knife lanyard, pistol lanyard or a call (boatswain's pipe) lanyard.

lash—To secure by turns of line, wire or chain.

lash-up—Term applied to a rig, device, or system or an uncomplimentary term, as in "What kind of a lash-up is that?"

latitude—Angular distance measured in degrees, minutes, and seconds north or south of the equator.

lay—**1.** A command to go in the direction indicated, e.g., "**LAY (YOURSELF) UP ON THE MAIN DECK,**" or "**LAY (YOURSELF) AFT.**" **2.** The twist of a line's strands (right lay or left lay). **3.** Lay the course: able to fetch a given point when close-hauled.

left-handed—Counterclockwise. Extended to mean not the right way or backwards.

left-laid—Refers to line or wire in which the strands spiral along in a counterclockwise direction as one looks along the line.

leg—**1.** One of the two or more sections in a span or bridle, boat sling, set of beam hooks or similar hoisting attachment. **2.** The distance sailed on one tack. **3.** One of the sides of a triangle.

L-hour—The specific hour on C-Day at which a deployment operation commences or is to commence.

lie off—Heave to at some distance away.

lifeline—**1.** Any line secured along the deck to lay hold of in heavy weather. **2.** Stout line of cable fore and aft around the deck to keep crew from falling overboard. **3.** Any line used to assist personnel.

lift—**1.** Standing rigging supporting a yard. **2.** Term applied to any load to be hoisted. **3.** A wind shift that allows a boat to sail above its mean wind course.

limber hole(s) —**1.** Fore-and-aft hole through the frames in a boat's bilges, permitting water to flow toward the bilge pump suction point. **2.** Square holes cut through the lower part of a ship's floor-timbers, very near the keel, forming a channel for water, and communicating with the pump-well throughout the whole length of the floor. **3.** Square grooves cut through the underside of the floor-timber, about 9 inches from the side of the keel on each side, through which water may run toward the pumps, in the whole length of the floors. This precaution is requisite in merchant ships only, where small quantities of water, by the heeling of the ship, may come through the ceiling and damage the cargo. It is for this reason that the lower futtocks of merchant ships are cut off short of the keel.

line—In general, sailors refer to fiber rope as line; wire rope is referred to as rope, wire rope, or just wire. More exactly, line refers to a piece of rope, either fiber or wire, that is in use or has been cut for a specific purpose, such as a lifeline, heaving line or lead line.

lizard—**1.** A piece of rope with a thimble or bull's-eye spliced into the end and used as a fairlead. **2.** The line used to retrieve the end of a sea painter and lines used to lash objects to the side of a ship (such as the lower accommodation ladder platform).

loading plan—All of the individually prepared documents which, taken together, present in detail all instructions for the arrangement of personnel, and the loading of equipment for one or more units or other special grouping of person-

nel or material moving by highway, water, rail or air transportation. (JP 1-02)

longitude—Angular distance measured in degrees, minutes, and seconds east and west of the prime meridian (an imaginary line that runs north/south through Greenwich, England).

longitudinally—Fore-and-aft strength members, running the entire length of the ship, which serve to stiffen and strengthen the frames.

loom—**1.** The glow made in the sky by a light that has not yet risen above the horizon. **2.** The shaft of an oar.

lower away—Lower right on down. For example, to lower away a boat from the davit heads down into the water.

luff on luff—Combined purchases consisting of a luff tackle with another lull tackle clapped on its hauling part.

luff tackle—Purchase containing one single and one double block. A large tackle consisting of a double and a single block.

man helper—A pole with a brush or scraping implement attached to clean the ship's sides and bottom when it's in dry dock.

manifest—A document specifying in detail the passengers or items carried for a specific destination.

manrope—A safety line made up with a series of overhand or figure-eight knots evenly spaced to assist personnel climbing up or down.

marline—Two-strand, left-laid tarred hemp small stuff.

marry—To bring two ropes together, either side by side or end to end, and holding or seizing them.

mass casualty—Any large number of casualties produced in a relatively short period of time, usually as the result of a single incident such as a military aircraft accident, hurricane, flood, earthquake or armed attack that exceeds local logistic support capabilities. (JP 1-02)

mast table—Refers to a small compartment or locker on the main deck, built around the base of one of the masts.

materials handling equipment—Mechanical devices for handling supplies with greater ease and economy. Also called **MHE**. (JP 4-01.8)

mean high water—In regard to tide, the average height of high water measured over a period of time.

mean low water—In regards to tide, the average height of low water measured over a period of time.

mean sea level—The average height of the surface of the sea for all stages of the tide; used as a reference for elevations. Also called **MSL**. (JP 1-02)

mechanical advantage—A mechanical method of increasing an applied force. Disregarding the effects of friction, if a force of 100 pounds applied to a tackle is magnified to a force of 400 pounds, the purchase or mechanical advantage is said to be four to one, or 4: 1.

meet her—Check the swing of a vessel by putting on opposite rudder.

mercurial barometer—Barometer that indicates atmospheric pressure by the height of a column of mercury.

midship guy—Guy between boom heads in a yard-and-stay rig. Also called a schooner guy or lazy guy.

mooring staple—Metal fitting on a ship's side to which a chain may be attached for added security in mooring alongside.

mousing—Line fashioned around a hook or shackle to prevent the load from falling off or the shackle pin from being undone.

movable block—Block in a purchase that is not a fixed block. Block to which the load is applied.

naval air training and operating procedures standardization officer—A member of the special staff on all Marine Corps aviation units with aircraft assigned. The NATOPS officer works closely with the operations and safety officers, supervising standardization within the unit and advises the commander on all NATOPS matters. (MCRP 5-12C)

Navy anchor—Old-fashioned anchor. Anchor with a stock.

Navy support element—The maritime pre-positioning force element that is composed of naval beach group staff and subordinate unit personnel, a detachment of Navy cargo handling force personnel, and other Navy components, as required. It is tasked with conducting the off-load and ship-to-shore movement of maritime pre-positioned equipment and/or supplies. Also called **NSE**. (JP 3-02.2)

neap tide—A tide of less than average range, caused by the gravitational forces of the moon and the sun opposing each other.

noncombatant evacuation operations—Operations directed by the Department of State, the Department of Defense, or other appropriate authority whereby noncombatants are evacuated from foreign countries when their lives are endangered by war, civil unrest or natural disaster to safe havens or to the United States. Also called **NEOs**. (JP 3-07)

nothing to the right (left)—Order given to the helmsman not to allow the ship to come to right (left) of the course because of some danger lying on that side of the course.

occulating light—A navigational aid in which the period of light is equal to or more than the period of darkness.

oilskins—Originally, cotton clothing waterproofed by several coats of linseed oil. Now applied to any wet-weather or waterproof clothing.

onboard—Word to describe equipment installed aboard a ship, such as onboard computers.

ordinary moor—Method of mooring with anchors in which the upstream anchor is dropped first.

outer bight line—Line sometimes used in the close-in method of fueling. It extends from the receiving ship to the outboard saddle.

outhaul—In general, a line used to haul a piece of gear from a Ship (See INHAUL.) Usually a line or tackle, an outhaul is used to pull the clew of the mainsail towards the end of the boom, thus tightening the foot of the sail.

overhaul—**1.** The act of drawing apart the blocks of a tackle. **2.** One vessel overtaking another. **3.** Repairing or refitting **4.** In fire fighting, to break up and rake over debris caused by the fire, to make sure there are no smoldering embers.

parbuckle—The act of hauling in an object in the bight of a line. One end of the line is fixed and the other end is used as the hauling part.

parcel—The act of wrapping a line or splice in strips of canvas or cotton to build up a symmetrical surface for serving.

patent anchor—A stockless anchor.

paulin—Short for tarpaulin.

pay—After a seam in a wooden deck or hull is caulked, it is payed by pouring pitch or other caulking compound into the remaining unfilled space.

pay out—Expresses the idea to feed out. Past tense is “payed out.”

pelican hook—A hook used to provide an instantaneous release. It can be opened while under strain by knocking away a locking ring that holds it closed.

pelorous—Device for taking bearings; consisting of a movable ring, graduated like a compass card, and a pair of sighting vanes.

pendant—**1.** A single part of line or wire used to extend the distance spanned by a purchase. **2.** A single part of line or wire whose purpose is to provide a means for connecting or disconnecting, such as an anchor buoy pendant or a hauling pendant.

pic—In plaited line, the distance between adjacent crowns.

pier—A structure for mooring vessels, which is built out into the water perpendicular to the shoreline.

pier head—The outboard end of a pier.

pigstick—Familiar term for a small staff bent to the truck halyards to which the commission pennant is attached.

pintle—A pin fastened to the rudder that fits into the gudgeon on the stern.

pitch—The vertical rise and fall of a vessel's bow and stern, caused by a head sea or a following sea.

planning phase—In amphibious operations, the phase normally denoted by the period extending from the issuance of the order initiating the operation up to the embarkation phase. The planning phase may occur during movement or at any other time upon receipt of a new mission or change in the operational situation. (JP 3-02)

position buoy—A towing spar used to mark the location of an object towing astern, as the end of a magnetic sweep cable.

preventer—**1.** Any line, wire or chain whose general purpose is to act as a safeguard to prevent it from being carried away. **2.** A line run forward from the boom to a secure fitting to prevent the boom from swinging violently when running. **3.** An additional rope or spar used as a support.

primary control officer—In amphibious operations, the officer embarked in a primary control ship assigned to control the movement of landing craft, amphibious vehicles, and landing ships to and from a colored beach. Also called **PCO**. (JP 3-02)

primary control ship—In amphibious operations, a ship of the task force designated to provide support for the primary control officer and a combat information center control team for a colored beach. Also called **PCS**. (JP 3-02)

primary flight control—The controlling agency in aviation ships and aviation assault ships that is responsible for air traffic control of aircraft within 5 nautical miles of the ship. On Coast Guard cutters, primary flight control duties are performed by a combat information center, and the term "PRIFLY" is not used. Also called **PRIFLY**. (JP 1-02)

puddening—**1.** A bulky fender attached to a strong back or to the stem or gunwales of a boat.

2. A quantity of yarns, matting or oakum used to prevent chafing.

purchase—A tackle, lever or device that provides mechanical advantage or power. Also used as an effective hold or position for applying power in moving or heaving around.

put away—Expresses the idea to leave by water, as in the boat put away from the ship.

put off—Same as put away, but usually restricted to putting off from the shore.

put out—Expresses the idea putting off and heading for sea.

quadruple container—A quadruple container box 57.5" x 96" x 96" with a metal frame, pallet base, and International Organization for Standardization (ISO) corner fittings. Four of these boxes can be lashed together to form a 20-foot American National Standards Institute and/or ISO intermodal container. Also called **QUADCON**. (JP 1-02)

quarterdeck—**1.** An area of the deck on a Navy ship that is the watch station of the officer of the deck in port. **2.** An area on the weather deck designated by the commanding officer for official ceremonies.

quay—A loading and discharging place, usually paralleling the shore. Usual construction consists of a masonry wall in the water.

range—**1.** The distance between any given point and an object or target. **2.** Extent or distance limiting the operation or action of something, such as the range of aircraft, ship or gun. (JP 1-02) A navigational range consists of two markers, some distance apart, located on a known line of true bearing. An area designated for a particular purpose, such as a target range or a degaussing range. In regard to tide, the total rise or fall from low water to high or vice versa.

rat guard—A hinged metal disk that can be secured to a mooring line to prevent rats from using the line to gain access to the ship.

ratline—**1.** Three-strand, right-laid, tarred hemp used chiefly nowadays for snaking on destroyer-type vessels. **2.** Lines running across the shrouds, horizontally, like the rounds of a ladder, and used to step upon in going aloft.

rat-tailed stopper—A braided tapering stopper used on boat falls and mooring lines.

reeve —To pass or thread a rope through a block or hole. Past tense is rove.

rehearsal phase—In amphibious operations, the period during which the prospective operation is practiced for the purpose of: **1.** testing adequacy of plans, the timing of detailed operations, and the combat readiness of participating forces; **2.** Ensuring that all echelons are familiar with plans; and **3.** Testing communications-information systems. (JP 3-02)

releasing hook—Hook on the lower block of a boat fall, which remains closed as long as there is weight on it but tumbles and rejects the hoisting eye as soon as the weight is taken off. Usually called an automatic releasing hook.

rig—**1.** The act of setting up any device or equipment containing rigging. Extended to cover setting up any device or equipment, as to rig for divine services or movies. **2.** To fit a vessel with masts, spars, sails, and running and standing rigging.

rigging—The wires, lines, halyards, and other items used to attach the sails and spars to the boat. The lines that do not have to be adjusted often are known as standing rigging. The lines that are adjusted to raise, lower and trim the sails are known as running rigging.

right-laid—Refers to line or wire in which the strands spiral along in a clockwise direction as one looks along the line.

roddle—That part of a wire rope clip into which the U-bolt is inserted.

roller chock—A chock fitted with one or more rollers to reduce friction on mooring lines. On minesweepers, such a chock provided for the magnetic sweep cable is called an A-frame.

rope yarn Sunday—In the days of sailing ships, deck hands often spent Sundays unlaying rope into yarns and making oakum, hence “rope yarn Sunday.” Later the term was applied to periods during which sailors were allowed to make their personal effects shipshape. Now the term is applied to an otherwise workday that has been granted as a holiday for the purpose of taking care of personal business.

run away—Run a line in as fast as possible by taking hold and running down the deck with it. (See walk away.)

runner—A purchase in which a single block is free to move or “run” in the bight of the line.

running light—Any light required by law to be shown by a vessel underway.

sail area—The vertical surface of the hull that the wind exerts force on.

sally—The act of the crew running in a body fore and aft or athwartships to create a desired shift in weight. This might be done during an attempt to free a grounded vessel or to time the period of roll for purposes of computing stability factors.

salvo latch—A device to prevent the opening of the breech of a gun until after the gun has been fired.

samson post—A strong vertical timber on the forward or aft weather deck, used in underway replenishment, towing, and securing.

save-all—Nets suspended under brows and under cargo handling operations between the ship and the pier.

schooner guy—Same as midship guy.

scope—The ratio of the length of an anchor line, from a vessel's bow to the anchor to the depth of the water.

screw—The propeller of a ship or boat.

scull—Moving the rudder or a single oar over the stern back and forth to move the boat forward.

scupper—**1.** An opening in a deck, cockpit, toe-rail or gunwale to allow water to run off the deck and drain back into the sea. **2.** Opening in the side through which wastewater from a head or galley is discharged. Extended to mean any type of drain opening.

scuttle—**1.** A small, quick-closing watertight hole. **2.** Deliberately sinking a vessel.

sea-air-land team—A naval force specifically organized, trained, and equipped to conduct special operations in maritime, littoral, and riverine environments. Also called **SEAL** team. (JP 3-05.3)

sea anchor—A drogue or drag device to slow down a boat, hold its bow into the sea in heavy weather, and reduce the boat's drift downward.

sea ladder—Permanent ladder secured to the ship's hull.

sea painter—A line led well forward on the ship to a boat alongside. The sea painter is secured by passing the line around the inboard cleat on the boat, then laying the eye of the line over the standing part, it is then secured by passing a fid

or toggle over the eye and under the standing part of the line.

sea room—A safe distance away from a shore, jetty, another boat or other hazards.

sea state—A scale that categorizes the force of progressively higher seas by wave height. This scale is mathematically co-related to the Pierson-Moskowitz scale and the relationship of wind to waves. (JP 4-01.6)

seizing stuff—Three-strand, right-hand, rope-laid stuff made in 6, 9 or 12 threads of American hemp.

selective unloading—In an amphibious operation, the controlled unloading from assault shipping, and movement ashore, of specific items of cargo at the request of the landing force commander. Normally, selective unloading parallels the landing of nonscheduled units during the initial unloading period of ship-to-shore movement. (JP 3-02.2)

servicing—A smooth finish on a line or wire, made by winding on close turns of marline or seizing stuff with a servicing mallet.

set—**1.** To raise a sail. **2.** The direction the current is flowing. **3.** Movement of a ship, due to current or tide, not necessarily in the direction in which the ship is heading. **4.** A term applied to sails in relation to their angle with the wind; e.g., the set of the jib. **5.** A ship sets sail when she departs on a voyage, whether sails are used or not. **6.** An anchor is set when it has gripped the bottom and holds without dragging.

set down—Set to shoreward.

set taut—Take out all the slack. This order is given before "**HOIST AWAY.**"

set up—**1.** Tighten up. **2.** To increase the tension of the shrouds and backstays by tackles and lanyards.

sh—Line made from a mixture of sisal and hemp.

shank—The shaft of an anchor, to which the flukes are attached.

shears (shear legs) —Support used in a hoisting rig, consisting of two spars lashed together at the head and set up so as to resemble an inverted V.

shell—**1.** The outside plating of a ship from stem to stern. **2.** The outer casing of a block inside which the sheave revolves.

ship—**1.** A large, seagoing surface vessel having a crew quartered on board and capable of extended independent operation. **2.** To place or take on board a ship. **3.** To take in (water) over the side of a ship.

ship-to-shore movement—That portion of the assault phase of an amphibious operation that includes the deployment of the landing force from the assault shipping to designated landing areas.

shore—**1.** Land in general, but usually that part adjacent to the water. **2.** To brace, as to “shore up.” **3.** A portable wooden or steel beam used in damage control.

short stay—The situation when the anchor cable has been hove in just short of breaking water.

shot—A length of anchor chain, when joined together others, makes up the anchor cable. A standard shot is 15 fathoms long.

shroud—Piece of standing rigging providing athwartship support for a mast.

side light—Green (starboard) and red (port) lights on the sides of the boat, required for navigation at night. Each light is supposed to be visible through an arc of 112.5 degrees, beginning from directly ahead of the boat to a point 22.5 degrees aft of the beam.

sight—A nautical astronomical observation of the sun, moon or a star, by which means a vessel’s position can be determined. The sight was taken with a sextant at a specific time, determined by a chronometer.

sight the anchor—Heave the anchor up to where it can be seen and then drop it again. This is done to determine if the anchor is clear.

single up—**1.** The command given before unmooring a ship from a pier or wharf. **2.** To take in all double sections of line between the ship and the pier, leaving the vessel moored only by a single line.

sister hooks—Twin hooks in a thimble or on a hinge which, when combined, form an eye.

slack—**1.** Allow a rope or chain to run or feed out. **2.** The loose part of a line that takes no strain.

slack away—**1.** To let out a line. **2.** Order to continue slacking.

sling—**1.** A piece of line or wire, whose ends are spliced together and passed around an article to be hoisted. **2.** Two or more legs spliced into a ring, manufactured to hoist a specific article or type of article, such as boat slings and beam slings. **3.** To set a cask, spar, gun or other article in ropes, so as to put on a tackle and hoist or lower it.

slip—**1.** When at anchor, disconnecting the cable or letting the end of the cable run out (slipping the cable). **2.** Space between two piers.

slush—**1.** The act of applying a preservative to a line or wire. **2.** The preservative substance so applied.

small stuff—A general term for any fiber line less than 1 3/4 inches in circumference.

snaking—Netting rigged between the housing line or footrope and the waterway bar to prevent personnel and objects on deck from being washed overboard.

snatch block—A single-sheaved block with a hinged strap that can be quickly opened to take the bight of a line, making it unnecessary to reeve the end of the rope through the block.

snub—Check a line, wire or chain quickly. A ship is snubbed by letting go the anchor, bringing the ship up quickly.

sound—**1.** To measure the depth of the water. **2.** A long, wide body of water that connects other large bodies of water. **3.** A long, wide ocean inlet. **4.** The act of a whale or similar sea creature diving toward the bottom.

soundings—Water of limited depth, as over the continental shelf; a ship is off-soundings when the land lead can no longer reach the bottom, and on-soundings when it can.

span—**1.** A line made fast at both ends with a tackle, line or fitting made fast to its bight. **2.** Wire rope stretched between davit heads to which lifelines are secured.

spanner—Wrench for tightening couplings on a firehose.

spar buoy—Buoy consisting of a floating spar, or metal shaped like a spar.

special purpose Marine air-ground task force—A non-standing MAGTF temporarily formed to conduct a specific mission. It is normally formed when a standing MAGTF is either inappropriate or unavailable. Also called **SPMAGTF**.

spot—Locate or place, as in spotting boom heads for yard-and-stay transfer.

spring—**1.** A rope made fast to the cable at the bow and taken in abaft, in order to force the bow or stern in or out when mooring or unmooring. **2.** To crack or split a mast. **3.** *To spring a leak*, is to begin to leak. **4.** *To spring a luff*, is to force a vessel close to the wind, in sailing.

spring lay—A rope in which each strand consists partly of wire and partly of fiber.

spring line—A mooring line leading forward or aft that helps keep a boat from moving fore and aft while docked.

spring tide—A tide that occurs when the moon is new or full and has a greater range than those at other times.

standard rudder—The amount of rudder angle required to cause a ship to make a turn within a certain (standard tactical) diameter.

stand by—**1.** Be prepared to execute an order or a maneuver. **2.** Remain in the vicinity, prepared to render assistance. **3.** Assume another's duties.

stand in (out)—Head in (or out) of a harbor.

standing part—The *standing part* of a rope is that part which is fast, in opposition to the part that is hauled upon; or the main part, in opposition to the end. The *standing part* of a tackle is that part which is made fast to the blocks and between that and the next sheave, in opposition to the hauling and leading parts.

standing rigging—The part of a ship's rigging which is permanently secured and immovable; e.g. stays and shrouds.

start—To induce motion, as to start a grounded vessel.

stay—Lines running fore and aft from the top of the mast to keep the mast upright. Also used to

carry some sails. The backstay is aft of the mast, and the forestay is forward of the mast.

steady—**1.** Stop the swing. **2.** An order to the helmsman, meaning to steady the ship on whatever heading the ship comes to.

steerageway—Enough headway to provide steering effect. When a vessel no longer answers its rudder, it is said to have lost steerageway.

stem—The foremost vertical extension of the keel, to which the forward ends of the strokes are attached.

stem band—A metal band attached to the stem of a wooden boat.

step—**1.** A fitting for the bottom of the mast. **2.** The act of placing the foot of the mast in its step and raising the mast.

stern fast—A line used to make a boat fast by the stern.

stern sheets—That part of a boat included between the stern and the aftermost seat of the rowers, generally furnished with seats for passengers.

stick—A familiar term for mast.

stick out—Pay out, as to pay out the cable on a stern anchor winch.

stop—**1.** Small line used to tie the sails, when they are flaked or furled. **2.** One of a series of short lines attached to the edge of an awning, boat cover, etc., used to lash the edge to a ridge rope, jackstay or other support.

stop off—The act of attaching a stopper to a line, wire or chain under a strain to hold the strain temporarily while the rope or chain is being belayed.

stopper—A line or chain (such as a deck stopper or boat fall stopper) or a patented device (such as

a carpenter's stopper) used for stopping off a rope or chain. stopper or boat fall stopper.

stow—To pack or secure articles into a storage space or cargo into a cargo space.

strain—Tension.

strap—**1.** Usually means a short line or wire having an eye in either end. **2.** A ring of rope made by splicing the ends, and used for slinging weights, holding the parts of a block together, etc. **3.** A rope, wire or iron binding, encircling a block and with a thimble bound into it for taking a hook. **4.** A piece of rope spliced round a block to keep its parts well together. Some blocks have iron straps, in which case they are called iron bound.

stream—The act of permitting a tow to run out the desired distance or to the end of the towline.

strike—**1.** To shorten or douse. **2.** To lower a sail or colors. **3.** To beat against the bottom. **4.** To lower the flag in token of submission. Lowering the topmasts is commonly termed striking them.

stringer—**1.** Long timber between piles at the edge of a pier. **2.** Horizontal member attached to the side between frames and serving as a support for the end of a transverse (athwartship) frame. **3.** A long horizontal member used to support a ship's bottom, a building floor or an airplane fuselage.

strongback—**1.** Heavy spar spanning radial davits, against which a ready lifeboat is gripped in. **2.** Heavy steel clamp bolted across the top of a cargo hatch. **3.** A light spar set fore and aft on a boat, serving as a spread for the boat cover.

strut—Brace supporting the propeller shaft.

stud—Metal piece in a link of anchor chain that keeps the link from kinking.

surge—**1.** To slack off a line by allowing it to slip around the object to which it is secured. **2.** The act

of holding turns of a line on a gypsy in such a manner as to allow the gypsy to rotate without heaving in on the line. **3.** Sudden strain on a towing hawser caused by the pitching, sheering or yawing of the tow and/or the towing vessel. **4.** The rise and fall of the sea, usually due to wave action.

swing—Progressive change of heading caused by an angle on the rudder or by a ship circling around its anchor.

swing out (in)—Swing a boat from its stowed position to its lowering position. Reverse procedure for swing in.

tactical air control center—The principal air operations installation (ship-based) from which all aircraft and air warning functions of tactical air operations are controlled. Also called **Navy TACC**. (JP 3-09.3)

tactical air coordinator (airborne) —An officer who coordinates, from an aircraft, the actions of other aircraft engaged in air support of ground or sea forces. Also called **TAC(A)**. (JP 1-02)

tactical air direction center—An air operations installation under the overall control of the tactical air control center (afloat) or tactical air command center, from which aircraft and air warning service functions of tactical air operations in an area of concern are directed. Also called **TADC**. (JP 1-02)

tactical air officer (afloat) —The officer (aviator) under the amphibious task force commander who coordinates planning of all phases of air participation of the operation and air operations of supporting forces en route to and in the objective area. Until control is passed ashore, this officer exercises control over all operations of the tactical air control center (afloat) and is charged with the following: **a.** control of all aircraft in the objective area assigned for tactical air operations, including offensive and defensive air; **b.** control of all other aircraft entering or passing

through the objective area; and **c.** control of all air warning facilities in the objective area.

tactical-logistical group—Representatives designated by troop commanders to assist Navy control officers aboard ships in the ship-to-shore movement of troops, equipment, and supplies. Also called **TACLOG group**. (JP 1-02)

taut—Stretched tight with no slack. A taut ship is one that is in a high state of discipline and efficiency.

tender ship—**1.** A ship that heels over easily when underway. **2.** A small vessel employed to attend a larger one, for supplying her with provisions and other stores, or to carry intelligence, and the like.

tide—**1.** Periodic variation in the surface level of the oceans and of bays, gulfs, inlets, and tidal regions of rivers, caused by gravitational attraction of the sun and moon, with the lunar effect being the more powerful. **2.** To tide up or down a river or harbor, is to work up or down with a fair tide and head wind or calm, coming to anchor when the tide turns.

tomming, tomming down—Securing cargo against vertical movement.

top hamper—General term for a ship's masts, stacks, and other rigging aloft.

topping lift—Line, wire, or tackle used to hoist, lower, and support the head of a cargo boom or the outboard end of a sailing boom or boat boom.

top up—Raise a boom to a working angle by means of its topping lift.

towing spar—A spar or other wooden device towed astern by ships in formation when visibility is poor to assist in station keeping. (See **position buoy**.)

transverse—Part of the structure of a ship athwartships.

trough—The bottom of a wave; the valley between the crests.

tumble—The act of an automatic releasing hook in opening upon release of the weight.

‘tween decks—The space between any decks.

two-block—**1.** To reach the end. **2.** Round in a tackle all the way so that the blocks come together. Extended to mean hoist an article to the highest position possible. **3.** In relation to signal flags, this term has been replaced by close up.

U-bolt—A U-shaped bolt with threads on each end. The bolt in a wire rope clip.

unit personnel and tonnage table—A table included in the loading plan of a combat-loaded ship as a recapitulation of totals of personnel and cargo by type, listing cubic measurements and weight. Also called **UP&TT**. (JP 1-02)

unlay—Untwist and separate the strands of a rope.

unmoor—**1.** To heave up one anchor so that the vessel may ride at a single anchor. **2.** To cast off hawsers by which a vessel is attached to a buoy or wharf. **3.** When a ship is moored with anchors, reconnecting each anchor to its own chain and heaving in the anchors.

unship—The act of detaching or unrigging any piece of apparatus from its operating position. To take anything from the place in which it was fixed.

up and down—The situation where the anchor cable and the shank of the anchor lead up and down and the crown of the anchor still is on the bottom.

up behind—Slack off quickly and run slack to a belaying point. This order is given when a line or

wire has been stopped off or falls have been four-in-handed and the hauling part is to be belayed.

vang guy—A vang used to guy a cargo or other boom.

variation—Magnetic compass error caused by the difference between the magnetic pole and the geographic pole and certain local conditions. It is expressed in degrees east or west.

veer—**1.** Allow a line, wire or chain to run out by its own weight, as to veer cable by slacking the brake on a disconnected windlass. **2.** A shifting of the wind direction; clockwise in the northern hemisphere, counterclockwise in the southern hemisphere.

vertical replenishment—The use of a helicopter for the transfer of materiel to or from a ship. Also called **VERTREP**. (JP 1-02)

waist—That part of the upper deck between the quarterdeck and forecastle.

walk away—Haul in a line by taking hold of the line and walking down the deck, rather than by using the hand-overhand method.

walk back—Keeping control of the load, walk toward the belaying point.

walk out—Pay out cable under power.

warp—**1.** Move one end of a vessel broadside by heaving on a line secured on the dock. **2.** The longitudinal threads in canvas and other textiles. **3.** Hawser used when warping. **4.** The line by which a boat rides to a sea anchor. **5.** Mooring ropes.

warping winch—Winch on the main deck aft, used to warp in the stern when mooring alongside.

waterborne—Afloat or in contact with the water's surface.

weather—**1.** In the direction from which the wind blows. **2.** The act of surviving the onslaught of the elements, as to weather a gale.

weigh anchor—Hoist the anchor clear of the bottom. Sometimes used as an order meaning to get underway.

wet dock—**1.** Where the tidal range is great, basins with gates are provided as docking places. The ships enter at high tide and the gates are closed, keeping the water in the basin when the tide ebbs. **2.** Repairs made without removing the vessel from the water.

wharf—Manmade structure of wood or stone parallel to the shoreline, used for loading and offloading cargo, embarkation and disembarkation of passengers, or making fast. Virtually the same as a quay, except a quay is generally built only of stone.

whelps—The raised areas on the anchor windlass to engage links of chain.

wildcat—The drum of an anchor windlass that engages and moves the anchor chain.

windlass—The machine used to handle the ship's ground tackle. Also called the wildcat, which is fitted with whelps. On a horizontal shaft windlass, it is usually fitted with gypsy heads on each side to handle lines.

wire diameter—Refers to the diameter of a chain measured at the end of a link a little above the centerline.

wishbone—A V-shaped brace that supports the upper platform of an accommodation ladder or the platform in the chains. A boom composed of two separate curved pieces, one on either side of the sail. With this rig, sails are usually self-tending and loose-footed.

worm—The operation of passing a small line in a spiral between the lays of a rope, in preparation for parceling and serving. Rope is wormed, parceled, and served to protect it from water that could rot it, or from chafing.

yard-and-stay rig—A method of transferring a load from one point to another by means of whips or tackles spanning the two points.

yard boom—Cargo boom plumbed over ship's side (yard-and-stay rig).

yaw—To turn from side to side in an uneven course.

yoke—A piece of wood placed across the head of a boat's rudder, with a rope attached to each end, by which the boat is steered.

APPENDIX K

REFERENCES AND RELATED PUBLICATIONS

Because of ongoing changes/revisions, additional references and related publications not listed that may be needed in the performance of the duties as the Combat Cargo officer can be obtained at COMNAVSURFPAC/COMNAVSURFLANT, PHIBGRU, and PHIBRON Staffs.

Department of Defense (DOD) Publication

7000.14-R Financial Management Regulations (FMRS), volumes 1-15

Allied Tactical Publications (ATPs)

8(A) Doctrine for Amphibious Operations
36(A) Amphibious Operations Ship-to-Shore Movement
39(A) Amphibious Embarkation

Naval Warfare Publications (NWP)

3-02.1 Ship-Shore Movement
3-02.14 The Naval Beach Group
3-02.21 MSC Support of Amphibious Operations
3-04.1M Shipboard Helicopter Operations Procedures
4-0.4 (Rev E) Replenishment at Sea

Joint Publications (JPs)

1-0 Department of Defense Dictionary of Military and Associated Terms
3-02 Joint Doctrine for Amphibious Operations
3-02.2 Joint Doctrine for Amphibious Embarkation
4-01.3 Joint Tactics, Techniques, and Procedures for Movement Control
4-01.5 Joint Tactics, Techniques, and Procedures for Water Terminal Operations
4-01.6 Joint Tactics, Techniques, and Procedures for Joint Logistics
 Over-the-Shore (JLOTS)
4-01.7 Joint Tactics, Techniques, and Procedures for Use of Intermodal
 Containers in Joint Operations

Secretary of the Navy Instructions (SECNAVINSTs)

1650.1 Navy and Marine Corps Awards Manual
5500.4 Reporting Missing, Lost, Stolen, or Recovered (MLSR) Government Property

Chief of Naval Operations Instructions (OPNAVINSTs)

3120.32	Standard Organization and Regulations of the US Navy
3125.2	Policy for Embarkation Basing of Marine Corps Helicopters Aboard Amphibious Ships
5530.13	Department of the Navy Physical Security Instruction for Conventional Arms, Ammunition and Explosives (AA&E)
5720.2	Embarkation of US Naval Ships
6250.4	Pest Management Programs
7220.4	Flight Deck Hazardous Duty Incentive Pay (FDHDIP)
9640.1	Shipboard Habitability Program

Marine Corps Orders (MCOs)

1000.9	Sexual Harassment
1000.10	The Marine Corps Substance Abuse Program
P1020.34	Uniform Regulations
P1080.20	Marine Corps Total Force System Code Manual
P1080.40	Marine Corps Total Force System Personnel Reporting Instructions Manual (Short Title: MCTFSPRIM)
P1200.7	Military Occupational Specialties Manual (Short Title: MOS Manual)
1500.51	Marine Battle Skills Training (MBST) Program
1500.52	Marine Combat Water Survival Training (MCWST)
1510.61	Individual Training Standards (ITS) System for Embarkation/ Logistics Occupational Field 04
1510.89	Individual Training Standards (ITS) System for Marine Corps Common Skills (MCCS)
1510.90	Individual Training Standards (ITS) Systems for Marine Battle Skills Training (MSBT), volume 2- Corporal Through Gunnery Sergeant
P1610.7	Performance Evaluation System (Short Title: PES)
P3040.4	Marine Corps Casualty Procedures Manual (Short Title: MARCORCASPROC MAN)
3120.9	Policy for Marine Corps Expeditionary Unit (Special Operations Capable)(MEU)[SOC])
3400.3	Nuclear, Biological, and Chemical (NBC) Defense Training
3574.2	Entry Level and Sustainment Level Marksmanship Training with the M16A2 Service Rifle and M9 Service Pistol
P4000.51	Automatic Identification Technology Policy Manual (Short Title: AIT Policy)
P4400.39	War Reserve Materiel Policy Manual
P4600.7	Marine Corps Transportation Manual
4610.32	Standing Operating Procedure for Collecting and Recording Dimensions and Weights of Marine Corps End Items of Equipment for Airlift Certification
4610.35	Marine Corps Equipment Characteristics File (MCECF)
4680.5	Containerization Policy
6100.3	Physical Fitness

8010.1	Class V(W) Planning Factors for Fleet Marine Force Combat Operations
P8011.4	Marine Corps Table of Allowances for Class V(W) Materiel (Peacetime)
P4600.7	Marine Corps Manual

Navy/Marine Departmental Publications (NAVMCs)

1017	Table of Authorized Material
2761	Catalog of Publications

Marine Corps Doctrinal Publication (MCDP)

1-0	Marine Corps Operations
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Warfighting Publications (MCWPs)

3-11.4	Helicopter Operations
3-31.5	Ship-to-Shore Movement
4-11.3	Transportation Operations

Marine Corps Reference Publications (MCRPs)

3-31B	Amphibious Ships and Landing Craft Data Book
4-11.3D	The Naval Beach Group

Fleet Marine Force Manual (FMFM)

3-1	Command and Staff Action
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Fleet Marine Force Reference Publication (FMFRP)

4-17	Intermodal Containerization in the MAGTF (Marine Corps)
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Naval Sea Systems Command Operational Publications (NAVSEA OPs)

4	Ammunition Afloat
2165	Navy Transportation Safety Handbook for Explosives and Related Hazardous Material
2173	Approved Handling Equipment for Weapons and Explosives Vol 1 &2
4550	Handling and Stowage of Amphibious Assault Ammunition Aboard Amphibious Ship
SG-420-AP-MMA-010	Periodic Testing Arrangements for Ordnance Handling Equipment
SW010-AF-ORD-010	Identification of Ammunition
TW010-AC-ORD-010	Inspection Requirements for Receipt, Segregation, Storage and Issue of Navy and Marine Corps Conventional Ammunition (Vol 1 & 2)

TW024-AA-ORD-010 Ammunition Unserviceable, Suspended and Limited Use Ammunition
 S9310-AQ-SAF-010 Technical Manual for Batteries, Navy Lithium Safety Program
 Responsibilities and Procedures

Naval Sea Instructions (NAVSEAINSTs)

8020.9A Non-Nuclear Ordnance and Explosives Handling Qualification
 and Certification Program
 8023.05C Ammunition, Explosives, and Related Hazardous Material
 Shipment Discrepancy Reporting
 8023.12 Shipboard Explosives Safety Inspection Program
 10490.1 Connected/VERTREP Equipment for Handling Cargo

Naval Air Systems Command (NAVAIRSYSCOM) Manuals

00-80T-106 LHA/LHD NATOPS Manual
 11-1-116B/ Navy Ammunition Logistic Codes
 TW010-AA-ORD-030

Commander in Chief, Pacific Fleet Instructions (CINCPACFLTINSTs) (West Coast/WESTPAC Commands Only)

3170.2A Fleet Marine Force Pacific Map and Aeronautical Chart Allowance Lists
 5729.2M Embarkation in U.S. Naval Ships
 6250.1 Agriculture Quarantine Inspections of Naval Vessels
 8010.12 Pacific Fleet Conventional Ordnance Management Manual

Commander Naval Surface Force, Pacific Instructions (COMNAVSURFPACINSTs) (West Coast/WESTPAC Commands Only)

3502.2 Surface Force Training Manual
 4400.1 Surface Force Supply Procedures
 4621.1 Standard Amphibious Embarkation Documentation Procedures
 4650.1 Helicopter Transportation of Non-Military Personnel
 5355.3/ Unit Sweep Urinalysis Testing of Ships with Marines Embarked
 FMFPACO 5355.2
 5400.1 Naval Surface Force, U.S. Pacific Fleet Regulations
 7320.1 Troop Space Inventory/Inspection/Reimbursement Procedures
 10490.1C Portable Cargo Ordnance and Missile Handling Equipment Allowance
 for Amphibious Warfare Ships

Commander in Chief, Atlantic Fleet Instructions (CINCLANTFLTINSTs) (East Coast Commands Only)

4600.2 Opportune Lift
 4790.3 Joint Fleet Maintenance Manual Vol 1-5

8010.12 Atlantic Fleet Conventional Ordnance Management Manual
 8020.3 Atlantic Fleet Ordnance Handling Safety and Assistance Team (OHSAT)

**Commander, Naval Surface Force, Atlantic Instructions (COMNAVSURFLANTINSTs)
 (East Coast Commands Only)**

3000.3 Landing Force Spaces and Material Aboard COMNAVSURFLANT Ship
 4080 Series COMNAVINST
 5400.1 Naval Surface Force US Atlantic Fleet Regulations
 8023.4 Explosives Handling Personnel Qualification and Certification Program
 9000.1 Naval Surface Force, US Atlantic Fleet Maintenance Manual

Joint COMNAVSURFPAC/COMNAVSURFLANTINSTs

3000.15/FMFPAC/ Standing Operating Procedures for Raiding Craft
 FMFLANTO P3000.15
 3340.3 Wet Well Operations Manual
 3840.1 Joint Surf Manual
 9010.1/9010.2 Ships Loading Characteristics Pamphlet (SLCP)

**Marine Forces, Atlantic Orders (MARFORLANTOs)
 (East Coast Commands Only)**

P3120.15 Standing Operating Procedures for Marine Air Ground Task Force (MAGTF)
 Deployments (Short Title: SOP for MAGTF Deployments)
 4000.4 Standing Operating Procedures for Logistics
 P4000.51 SOP for Logistics Applications of Automated Markings and Ready Symbols
 4035.2 Tactical Marking Procedures for Equipment and Embarkation Equipment
 P4600.33 Standing Operating Procedures for Strategic Mobility
 4600.34 Management of Transportation of People (TOP), Things (TOT) and
 Port Handling/Stevedoring (PH/S)
 P8000.1/ SOP for Ground Ordnance
 MARFORPACO
 P8000.2
 P8000.2/ Standing Operating Procedures (SOP) for Class V(W) Material
 FMF PACO P8000.3

Miscellaneous

CFR	Title 49, part 140-155, Shipping
CNETINST 3541.1C	Firefighter Trainer Certification Program
EWTGLANTINST	EWTGLANT Course Catalog
	Joint Federal Travel Regulations (JFTR)
MTMCTEA	Logistic Handbook for Strategic Mobility Planning
Reference 94-700-2	
MTMCTEA	Marine Lifting and Lashing Handbook
Reference 95-55-22	
NAVEDTRA PQS	Flight Deck Familiarization
Management Guide	
43426-0	
NAVORDCENINST	Management of Conventional Ammunition
8010.2	
NAEC-ENG-7576	Shipboard Aviation Facilities Resume
1500.4D	
Public Law 95-208	The International Safe Container Act
SPCCINST 8010.12E	Conventional Ammunition Integrated Management System (CAIMS)